

PONY

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MATH

Main Book



4

Primary
First Term

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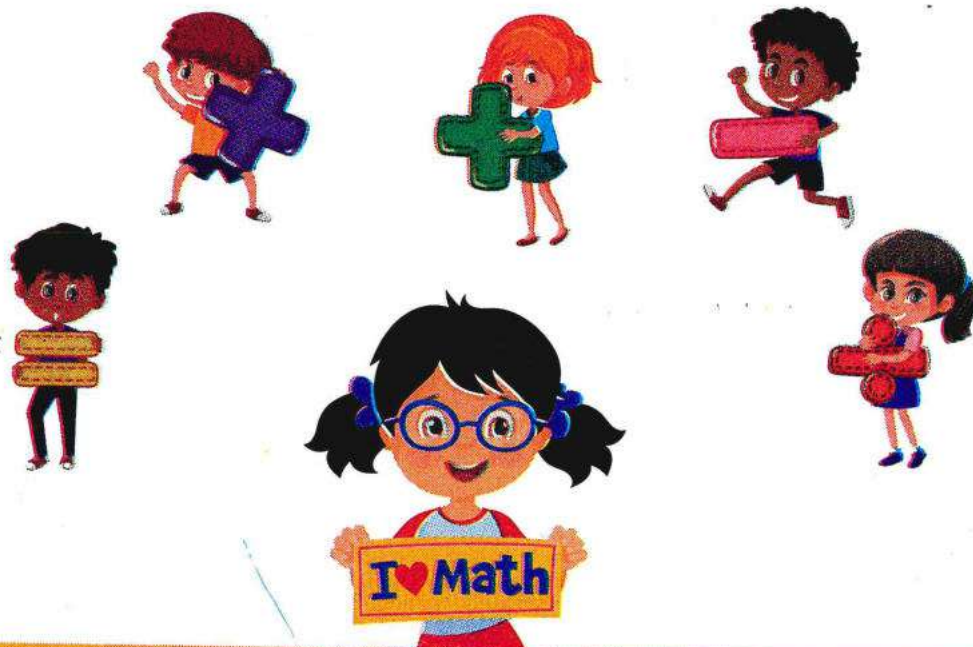
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Theme

1

Unit

1

Place Value

Concept 1.1: Reinforcing Place Value

Concept 1.2: Using Place Value

Number Sense and Operations

Unit

2

Addition and Subtraction Strategies

Concept 2.1: Using Addition and
Subtraction Strategies

Concept 2.2: Solving Multistep
Problems

Theme Units 

Unit

3

Concepts of Measurement

Concept 3.1: Metric Measurement

Concept 3.2: Measuring Time

Unit

4

Area and Perimeter

Concept 4.1: Explore Area and
Perimeter



Unit

1

Place Value

Concept 1.1

Reinforcing Place Value

Lessons

1&2

Big Numbers Changing Place Values

Learning Objectives:

By the end of these lessons, the student will be able to:

- Identify all whole number place values through the One Billion place.
- Explain how a digit's location in a number affects its value.
- Explain how the value of a digit changes as it moves to the left in a number.
- Describe the patterns he/she sees as a digit changes value.

Lessons

3&4

Many Forms to Write Numbers Composing and Decomposing

Learning Objectives:

By the end of these lessons, the student will be able to:

- Write the numerals in standard, word, and expanded forms.
- Build and break down numerals in multiple forms.

1&2 Lessons

Big Numbers Changing Place Values

Remember

To read a number:

- Divide the number into **numerical periods** from the right. Each period consists of **3** digits.
- Read the number from the **left**.

Example:

350,241

Numerical Period Numerical Period

Three hundred fifty **thousand**, two hundred forty-one

There is a numerical period called **Milliards**, followed by another numerical period called **Millions**, as follows:

Numerical Period			Numerical Period			Numerical Period			Numerical Period		
Milliards			Millions			Thousands			Ones		
Ones			Hundreds	Tens	Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones

Example: Use the following place value table to read the shown number:

Milliards			Millions			Thousands			Ones		
Ones			Hundreds	Tens	Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones
				3	5	8	9	1	4	5	5

- The previous number is read **from left to right**, so that **each number** is followed by **the name of the period**:

Thirty-five **million**, eight hundred ninety-one **thousand**, four hundred fifty-five.

Digit	رقم	Number	عدد
Numerical period	مجموعة عددية	Place value	القيمة المكانية

Example: Use the following place value table to read the shown number:

Milliards	Millions			Thousands			Ones		
Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones
3	9	9	0	7	0	2	5	7	1

– The previous number is read as:

Three **million**, nine hundred ninety **thousand**, seven hundred two **hundred**, five hundred seventy-one.

Practice 1 Use the following place value tables to read the shown numbers:

a

Milliards	Millions			Thousands			Ones		
Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones
		2	7	2	5	4	9	8	5

– The previous number is read as:

b

Milliards	Millions			Thousands			Ones		
Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones
1	3	9	0	4	0	2	6	5	0

– The previous number is read as:

Practice 2 Write the following numbers in **standard form**:

a Forty-five million, one hundred twenty-five thousand, one hundred twenty-three (.....)

b Two hundred fifty-nine million, twenty-four thousand (.....)

c Two hundred seventy-eight million, nine hundred eighty-six (.....)

- d Nine milliard, one hundred nine million, five hundred (.....)
- e Three milliard, sixty-five million, twenty-six thousand, forty-five (.....)
- f Four milliard, five million, nine thousand, eighty (.....)
- g Ten milliard, fifty thousand, two hundred (.....)
- h Six milliard, five million, forty (.....)

Practice 3 Write the following numbers in **word form**:

- a 5,214,320:
- b 45,150,200:
- c 714,058,009:
- d 405,006,047:
- e 7,504,630,412:
- f 3,025,040,007:
- g 9,000,500,000:
- h 8,030,020,000:

Milliards	Hundred Millions	Ten Millions	Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones	Place Value
9	4	7	1	6	5	7	2	8	3	
									3	
								8	0	
							2	0	0	
					7		0	0	0	
				5	0		0	0	0	
			6	0	0		0	0	0	
		1		0	0	0	0	0	0	
	7	0		0	0	0	0	0	0	
4	0	0		0	0	0	0	0	0	
9	0	0	0	0	0	0	0	0	0	
										Value

Example: In 9,471,657,283:

– The digit 6 is in the **Hundred Thousands** place.

So, its place value is the **Hundred Thousands**, and its value is 600,000.

– The digit 2 is in the **Hundreds** place.

So, its place value is the **Hundreds**, and its value is 200.

NOTE

- The value of **0** in any place is **0**.

Example: In 5,025,369,158:

– The digit 0 is in the **Hundred Millions** place.

So, its place value the **Hundred Millions**, and its value is **0**.

Practice 4 Write the **place value** and the **value** of the encircled digit in the following numbers:

	Number	Place Value	Value
a	86,7(2)0,543	.....	.....
b	23(9),418,207	.....	.....
c	463,357,1(0)0	.....	.....
d	70,(6)25,124	.....	.....
e	(8),792,134,566	.....	.....

Practice 5 In each of the following numbers, find the **place value** and the **value** of the digit (7):

- a In 35,785,692, the digit 7 is in the place, and its value is
- b In 2,522,573, the digit 7 is in the place, and its value is
- c In 7,325,864 125, the digit 7 is in the place, and its value is
- d In 125,000,347, the digit 7 is in the place, and its value is
- e In 27,000,210, the digit 7 is in the place, and its value is
- f In 2,700,200,300, the digit 7 is in the place, and its value is

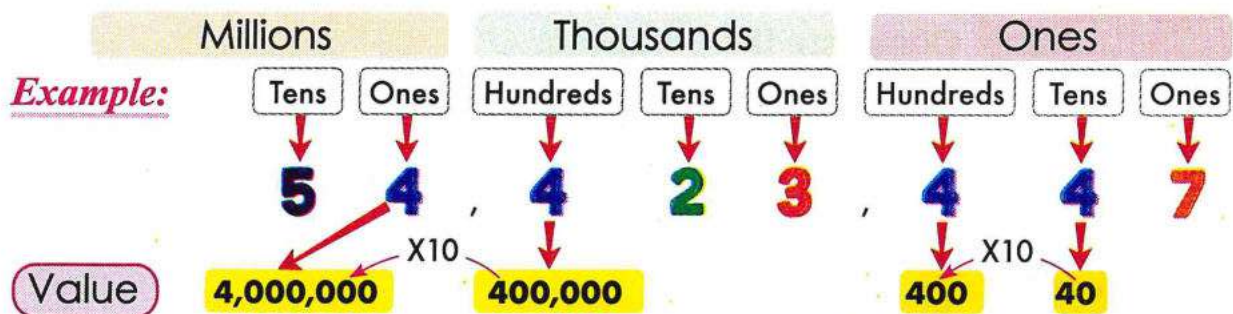
Practice 6 Underline the digit in the **Ten Millions** place:

- a 2,587,924,388 b 25,348,975 c 962,525,252

Practice 7 Underline the digit in the **Hundred Thousands** place:

- a 345,823,622 b 9,909,909 c 253,332

- The **value** of the number changes depending on **where it is located**, as in the following example:



From the previous example:

- We notice that the **value** of the digit **4** increases by **10** times when it moves **one step** to the **left**.

Practice 8 Complete the following:

- The value of the digit 3 in the **Hundreds** place is
- The value of the digit 7 in the **Ten Millions** place is
- The value of the digit 4 in the **Thousands** place is
- The value of the digit 6 in the **Milliards** place is
- The value of the digit 7 in the **Ten Thousands** place is

Example:

a $70,000,000 = 70$ ^{000,000} Millions

b $80,000$ ⁰⁰⁰ Thousands = $80,000,000$

c 500 ⁰⁰ ⁰⁰⁰ Hundred Thousands = 50 ^{000,000} Millions

Practice 9 Complete the following:

a $5,000,000 =$ Thousands

b $8,000,000 =$ Millions

c 50 Tens =

d 60 Ten Thousands =

e 50 Hundreds = Tens

f 800 Hundreds = Thousands

g 900 Hundred Millions = Milliards

h 60 Millions = Ten Thousands

Practice 10 In a colony with 10 anthills, each anthill has the same number of ants. Complete the following table:

The number of ants in each hill

7

12

28

92

156

1,786

The number of ants in the colony



10

1 Complete the following:

- a 60,025,703 (in word form) is
- b The place value of the digit 5 in 64,250,330 is the
- c The value of the digit 0 in the Ten Millions place is

2 Choose the correct answer:

- a 400,000 Hundreds = Millions (4 or 40 or 400 or 4,000)
- b The value of the digit 8 in is 800,000.
(80,075 or 560,800 or 823,686 or 8,002,369)
- c The digit that represents the Ten Millions in 95,673,547,123
is (9 or 7 or 4 or 2)

3 Match:

- | | |
|--|----------------|
| a Sixty million, six thousand, sixty • | • 66,000,600 1 |
| b Sixty million, six thousand, six • | • 60,006,060 2 |
| c Sixty-six million, six hundred • | • 66,006,000 3 |
| d Sixty-six million, six thousand • | • 60,006,006 4 |

3&4 Lessons

Many Forms to Write Numbers Composing and Decomposing

Standard Form

- It is a way of using **digits** to write a number.

Example: 35,254

Expanded Form

- It is a way of using the **value** of each digit to write a number.

Example: $30,000 + 5,000 + 200 + 50 + 4$

Word Form

- It is a way of using **words** to write a number.

Example: Thirty-five thousand, two hundred fifty-four

Short Word Form

- It is a way of using **digits** and **words** to write a number.

Example: 35 thousand, 254

Example: Write the number represented on the **place value** table in different forms:

Milliards	Millions			Thousands			Ones		
Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones
6	4	2	2	6	1	1	3	2	4
6 milliard	422 million			611 thousand			324		

- **Standard Form** : 6,422,611,324

- **Expanded Form** : $6,000,000,000 + 400,000,000 + 20,000,000 + 2,000,000 + 600,000 + 10,000 + 1,000 + 300 + 20 + 4$

- **Word Form** : Six milliard, four hundred twenty-two million, six hundred eleven thousand, three hundred twenty-four.

- **Short Word Form** : 6 **milliard**, 422 **million**, 611 **thousand**, 324

Standard form	الصيغة القياسية	Expanded form	الصيغة الممتدة	Word form	الصيغة اللفظية
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Example: Use the following place value table to write the number in different forms:

Milliards	Millions			Thousands			Ones		
Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones
4	9	0	2	0	7	0	0	1	5
4 milliard	902 million			70 thousand			15		

– **Standard Form** : 4,902,070,015

– **Expanded Form** : 4,000,000,000 + 900,000,000 + 2,000,000 + 70,000 + 10 + 5

– **Word Form** : Four milliard, nine hundred two million, seventy thousand, fifteen.

– **Short Word Form**: 4 **milliard**, 902 **million**, 70 **thousand**, 15

Practice 1 Write the following numbers in **word form**:

a 17,200,523:

.....

.....

b 100,020,045:

.....

.....

c 20,000,000 + 100,000 + 400 + 50 + 9:

.....

.....

d 7,000,000,000 + 50,000 + 200:

.....

.....

Practice 2 Write the following numbers in **standard form**:

- a Five million, twenty-five thousand, two hundred three:
- b Three milliard, three million, three thousand, three:
- c $9,000,000,000 + 40,000,000 + 80,000 + 200 + 6 =$
- d $7,000,000,000 + 500,000 + 200 =$

Practice 3 Write the **expanded form** of the following numbers:

- a $40,300,102 =$
- b $7,000,080,006 =$
- c Seven milliard, fifty thousand, two hundred =
- d One hundred fifty million, twenty-nine thousand, three hundred sixteen
=

Composing and Decomposing

- We can **decompose** numbers (**expanded notation**) by using the following **place value table**:

Milliards	Millions			Thousands			Ones		
Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones
4	9	7	5	3	1	8	6	4	2
$(4 \times 1,000,000,000)$	$(9 \times 100,000,000)$	$(7 \times 10,000,000)$	$(5 \times 1,000,000)$	$(3 \times 100,000)$	$(1 \times 10,000)$	$(8 \times 1,000)$	(6×100)	(4×10)	(2×1)

Composing	تكوين	Decomposing	تحليل	Expanded Notation	الصيغة التحليلية
-----------	-------	-------------	-------	-------------------	------------------

– From the previous place value table:

Digit	Place	Value	
2	Ones	2	$= (2 \times 1)$
4	Tens	40	$= (4 \times 10)$
6	Hundreds	600	$= (6 \times 100)$
8	Thousands	8,000	$= (8 \times 1,000)$
1	Ten Thousands	10,000	$= (1 \times 10,000)$
3	Hundred Thousands	300,000	$= (3 \times 100,000)$
5	Millions	5,000,000	$= (5 \times 1,000,000)$
7	Ten Millions	70,000,000	$= (7 \times 10,000,000)$
9	Hundred Millions	900,000,000	$= (9 \times 100,000,000)$
4	Milliards	4,000,000,000	$= (4 \times 1,000,000,000)$

So: **Composed Number:** 4,975,318,642

Decomposed Number (Expanded Notation):

$$(4 \times 1,000,000,000) + (9 \times 100,000,000) + (7 \times 10,000,000) + (5 \times 1,000,000) + (3 \times 100,000) + (1 \times 10,000) + (8 \times 1,000) + (6 \times 100) + (4 \times 10) + (2 \times 1)$$

Practice 4 Use the following **place value** tables to compose and decompose the numbers:

a

Milliards	Millions			Thousands			Ones		
Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones
8	0	2	7	0	5	0	0	0	6

1. Composed Number:

2. Decomposed Number (Expanded Notation):

.....

b

Milliards	Millions			Thousands			Ones		
Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones

1. Composed Number:

2. Decomposed Number (Expanded Notation):

$$(6 \times 1,000,000,000) + (9 \times 100,000) + (2 \times 10,000) + (5 \times 100) + (9 \times 10)$$

c

Milliards	Millions			Thousands			Ones		
Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones

1. Composed Number: 20,014,023

2. Decomposed Number (Expanded Notation):

.....

.....

Practice 5 Compose the following numbers:

a $(8 \times 10,000,000) + (7 \times 10,000) + (2 \times 10) + (1 \times 1) = \dots$

b $(2 \times 1,000,000,000) + (9 \times 10,000) + (8 \times 1,000) + (5 \times 100)$

=

c $900,000,000 + 200,000 + 50,000 + 200 + 9 = \dots$

Practice 6 Write the following numbers in **expanded form**:

a $(6 \times 10,000,000) + (7 \times 1,000,000) + (1 \times 100,000) + (2 \times 10,000) + (5 \times 1,000) + (1 \times 10) + (2 \times 1) = \dots$

b 7,024,650:

c Seventy-five million, thirty thousand, four hundred sixty:

Practice 7 Write the following numbers in **expanded notations**:

a Five million, two hundred sixty-four thousand, one hundred fifteen:

.....

b $10,200,548 =$

.....

c $2,000,000,000 + 200,000 + 50 + 7 =$

.....



10

1 Complete the following:

a $700,000,000 + 126,000 + 450 =$ (In standard form)

b $33,025,000 =$ (In short word form)

c $40,508 = (4 \times \text{.....}) + (5 \times \text{.....}) + (8 \times \text{.....})$

2 Choose the correct answer:

a $(5 \times 10,000,000) + (3 \times 10,000) + (6 \times 100) =$
(50,300,060 or 50,030,600 or 50,300,600 or 50,060,030)

b 8 milliards, 8 thousands =
(8,000,008,000 or 8,000,800,000 or 88,000 , or 8,008,000)

c 70 Hundred Millions =
(700 Millions or 7 Milliards or 7,000 Thousands or 70,000 Thousands)

3 Compose and decompose the number shown in the opposite table:

Milliards	Millions			Thousands			Ones		
0	H	T	O	H	T	O	H	T	O
7	3	0	0	0	4	0	0	0	8

a Composed:

b Decomposed:

Unit

1

Place Value

Concept 1.2

Using Place Value

Lessons

5-7

Comparing Big Numbers

Comparing Numbers in Multiple Forms Descending and Ascending Numbers

Learning Objectives:

By the end of these lessons, the student will be able to:

- Use symbols and place value to compare large numerals.
- Compare numbers in multiple forms.
- Describe the strategies he/she uses to compare numbers.
- Order numbers in multiple forms.
- Describe the strategies he/she uses to order.

Lesson

8

Rounding Rules

Learning Objectives:

By the end of this lesson, the student will be able to:

- Use multiple strategies to round numbers.
- Identify which estimation strategy provides more accurate estimates.

5.7

Lessons

Comparing Big Numbers

Comparing Numbers in Multiple Forms

Descending and Ascending Numbers

- To compare two numbers, do the following:

First: If the number of digits of each number is **different**.

► The number that has **more digits** is the **greatest**.

Example:

210,106	>	81,016
Six digits		Five digits

Second: If the number of digits of each number is **equal**.

► Compare the **values** of the digits of the two numbers from **left to right**:

Examples:

a 245,568 < 567,984 ⇒ Because the value of the digit 5 is greater than the value of the digit 2.	b 78,620 > 76,902 ⇒ Because the value of the digit 8 is greater than the value of the digit 6.	c 952,105 < 958,601 ⇒ Because the value of the digit 8 is greater than the value of the digit 2.
---	---	---

NOTE

- Different forms can be converted to the **standard form** to facilitate the comparison process.

Example: Compare using (<, =, or >):

325,050,240

Three hundred twenty-five million,
fifty thousand, two hundred forty

<

325,500,240

300,000,000 + 20,000,000 +
5,000,000 + 500,000 + 200 + 40

Practice 1 Complete the following table using (<, =, or >):

a	20,900,852		19,899,510
b	Three hundred twenty-five thousand, fourteen		$300,000 + 20,000 + 5,000 + 10 + 4$
c	$(9 \times 1,000,000) + (3 \times 10,000) + (9 \times 1,000) + (8 \times 100) + (7 \times 10)$		$90,000,000 + 30,000 + 9,000 + 800 + 70$
d	2,000,500,250		Two milliard, five hundred million, two hundred fifty thousand
e	Nine milliard		$(9 \times 100,000,000) + (9 \times 10,000,000) + (9 \times 1,000,000)$

Ascending Order

- It is ordering numbers from the **least** to the **largest**.

Descending Order

- It is ordering numbers from the **largest** to the **least**.

Example: To arrange the following numbers:

351,724 , 315,742 , 351,472 , 315,247

We compare **each digit** in the numbers from **left to right**.

~~3~~51,724 , ~~3~~15,742 , ~~3~~51,472 , ~~3~~15,247

If the first digits from the left are **equal**, we compare the next digits until we reach the **different** digits.

~~3~~51,724 , ~~3~~15,742 , ~~3~~51,472 , ~~3~~15,247

So, the **ascending order** : 315,247 , 315,742 , 351,471 , 351,724
 the **descending order** : 351,724 , 351,471 , 315,742 , 315,247

Practice 2 Arrange the following numbers in a **descending order**:

a 520,000 , 205,000 , 502,000 , 250,000

b 364,250 , 643,205 , 346,205 , 436,250

Practice 3 Arrange the following numbers in an **ascending order**:

a 999,999 , 9,000,000 , 100,000 , 900,900

b 78,090 , 79,010 , 78,091 , 79,100 , 78,999

Practice 4 Arrange the following numbers in an **ascending order**.
Numbers can be written using the **standard form**:

	Number	Standard Form	Order
a	Three milliard, ten million, two thousand, fifty		
b	Three milliard, one hundred million, twenty thousand, five		
c	Three milliard, one million, two hundred thousand, five hundred		
d	Three milliard, one hundred million, two hundred thousand, one hundred		
e	Three milliard, one million, two thousand, five		

Practice 5 Arrange the following numbers in a **descending order**.
Numbers can be written using the **standard form**:

	Number	Standard Form	Order
a	Four milliard, sixty thousand, seven		
b	$(4 \times 1,000,000,000) + (6 \times 100,000) + (7 \times 10)$		
c	$4,000,000,000 + 600,000 + 700$		
d	4,000,006,700		
e	Four milliard, six thousand, seventy		



1 Complete using (<, =, or >):

a 40,020,090 $(4 \times 10,000,000) + (2 \times 10,000) + (9 \times 10)$

b 18 Millions, 5 Thousands $10,000,000 + 800,000 + 5,000$

c 40 Hundred Millions 4,000 Thousands

2 Choose the correct answer:

a Nine hundred millions <
(80,000,000 or 879,000,000 or 99,000,000 or 1,000,000,000)

b 30,000 >
(3 x 10,000 or 3 x 100,000 or 3 x 1,000 or 4 x 10,000)

c Which of the following is less than one hundred thousand?
(1,000,000 or 111,111 or 100,000 or 10,000)

3 Arrange the following numbers:

a 785,368 , 788,635 , 783,568 , 786,385

1 Ascending order:,,,

2 Descending order:,,,

b 500,500 , 550,000 , 500,005 , 505,000

1 Ascending order:,,,

2 Descending order:,,,

8

Lesson

Rounding Rules

Rounding

It is **replacing** a number with a **simpler number** that is **close** to the original number.

The symbol ($\approx$) is called "**approximately equal**".

Rounding Strategies

First: The Midpoint Strategy:

Example: Round the number 468 to the nearest **Ten**:

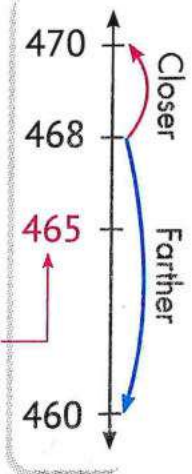
From the number line, we notice that:

⇒ The number 468 is located between the numbers **460** and **470**.

⇒ And the **midpoint** between the two numbers is **465**.

So, 468 is closer to 470.

$468 \approx 470$ (To the nearest **Ten**)



Example: Round the number 724 to the nearest **Hundred**:

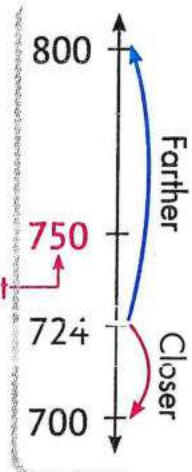
From the number line, we notice that:

⇒ The number 724 is located between the numbers **700** and **800**.

⇒ And the **midpoint** between the two numbers is **750**.

So, 724 is closer to 700.

$724 \approx 700$ (To the nearest **Hundred**).



Midpoint	نقطة المنتصف	Rounding	التقريب	Approximately equal	يساوي تقريباً
----------	--------------	----------	---------	---------------------	---------------

NOTE

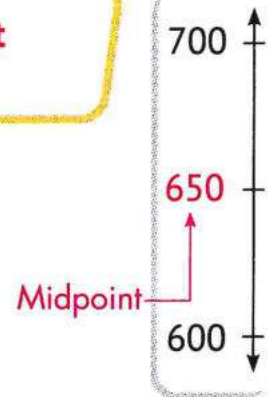
- When the number is in the **middle**, it is closer to the **greatest number**.

Example: Round the number 650 to the nearest **Hundred**:

From the number line, we notice that:

⇒ The number 650 is located between the two numbers **600** and **700** at the middle (**midpoint**).

So, $650 \approx 700$ (To the nearest **Hundred**)

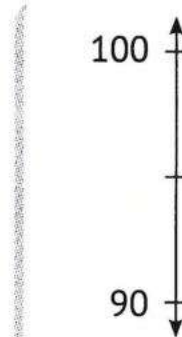
**Practice 1**

Write down the **midpoint** of the number line. Then, locate each number on the number line. Round each number to the nearest **Ten**:

a $238 \approx$



b $98 \approx$

**Practice 2**

Write down the **midpoint** of the number line. Then, locate each number on the number line. Round each number to the nearest **Hundred**:

a $278 \approx$



b $7,429 \approx$

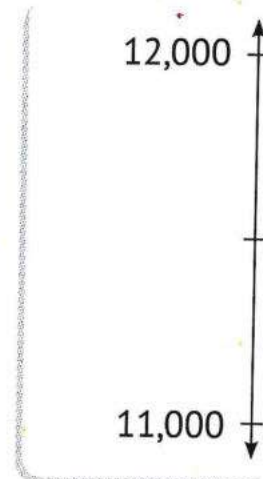
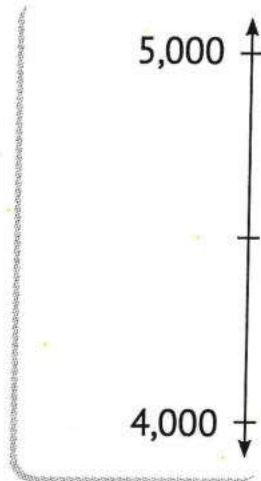


Practice 3

Write down the **midpoint** of the number line. Then, locate each number on the number line. Round each number to the nearest **Thousand**:

a $4,500 \approx$

b $11,157 \approx$

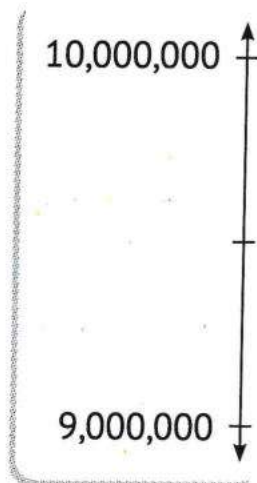


Practice 4

Write down the **midpoint** of the number line. Then, locate each number on the number line. Round each number to the nearest **Million**:

a $9,208,504 \approx$

b $22,699,205 \approx$



Second: Rounding Rule:

When rounding with a given place value:

1. We select the **digit** in the **place** to be **rounded**.
2. We replace the digits in the places that precede the previously selected digit with **zeros**.
3. We look at the digit in the place preceding the place to be rounded directly.

If this digit is **0, 1, 2, 3, or 4**, the number of the specified place remains **unchanged**.

If this digit is **5, 6, 7, 8 or 9**, we **add 1** to the number of the specified place.

Example: Round the following numbers to the nearest **10**:

a

$$\begin{array}{ccc} 7 & \textcircled{2} & \cancel{4} \\ \downarrow & \downarrow & \downarrow \\ 7 & 2 & 0 \end{array}$$

$$724 \approx 720 \text{ (To the nearest 10)}$$

b

$$\begin{array}{ccc} & & +1 \\ 4, & 3 & \textcircled{8} & \cancel{6} \\ \downarrow & \downarrow & \downarrow & \downarrow \\ 4 & 3 & 9 & 0 \end{array}$$

$$4,386 \approx 4,390 \text{ (To the nearest 10)}$$

Example: Round the following numbers to the nearest **1,000**:

a

$$\begin{array}{ccccc} & & +1 \\ 4 & \textcircled{9} & \cancel{7} & \cancel{8} & \cancel{6} \\ \downarrow & \downarrow & \downarrow & \downarrow & \downarrow \\ 5 & 0 & 0 & 0 & 0 \end{array}$$

$$49,786 \approx 50,000 \\ \text{(To the nearest 1,000)}$$

b

$$\begin{array}{ccccc} 7 & \textcircled{3} & \cancel{4} & \cancel{6} & \cancel{5} \\ \downarrow & \downarrow & \downarrow & \downarrow & \downarrow \\ 7 & 3 & 0 & 0 & 0 \end{array}$$

$$73,465 \approx 73,000 \\ \text{(To the nearest 1,000)}$$

Example: Round the following numbers to the nearest **1,000,000**:

a

1	5	1	7	0	,	7	2	8
↓	↓	↓	↓	↓		↓	↓	↓
1	5	0	0	0		0	0	0

$$15,170,728 \approx 15,000,000$$

b

5	0	9	3	3	,	2	0	6
↓	↓	↓	↓	↓		↓	↓	↓
5	1	0	0	0		0	0	0

+1

$$50,933,206 \approx 51,000,000$$

Practice 5 Round the following numbers to the nearest **10**:

a $255 \approx$

b $368 \approx$

c $73 \approx$

d $96 \approx$

e $12,257 \approx$

f $123,992 \approx$

Practice 6 Round the following numbers to the nearest **100**:

a $750 \approx$

b $6,897 \approx$

c $71,915 \approx$

d $999 \approx$

e $29,990 \approx$

f $1,527 \approx$

Practice 7 Round the following numbers:

a $15,523 \approx$

(To the nearest **1,000**)

b $86,165 \approx$

(To the nearest **10,000**)

c $987,625 \approx$

(To the nearest **100,000**)

d $452,652,251 \approx$

(To the nearest **1,000,000**)

e $669,458,562 \approx$

(To the nearest **10 Thousand**)

f $6,100,000,000 \approx$

(To the nearest **Milliard**)

Quiz?

10

1 Complete the following:

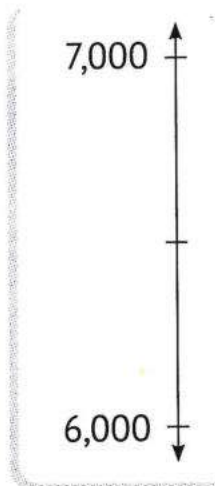
- a $250,000 \approx$ (To the nearest **Hundred Thousands**)
 b $362,274 \approx$ (To the nearest **Ten Thousands**)
 c $73,983 \approx$ (To the nearest **Hundred**)

2 Choose the correct answer:

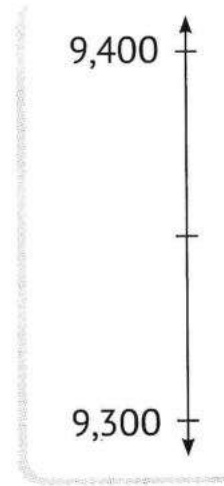
- a $\approx 343,000$ (To the nearest **Thousand**)
 (342,698 or 343,567 or 342,098 or 343,721)
 b $\approx 7,400$ (To the nearest **Hundred**)
 (3,423 or 7,494 or 7,395 or 7,340)
 c $5,256,747,023 \approx$ (To the nearest **Milliard**)
 (6 milliard or 5 milliard or 5,200 million or 5,300 million)

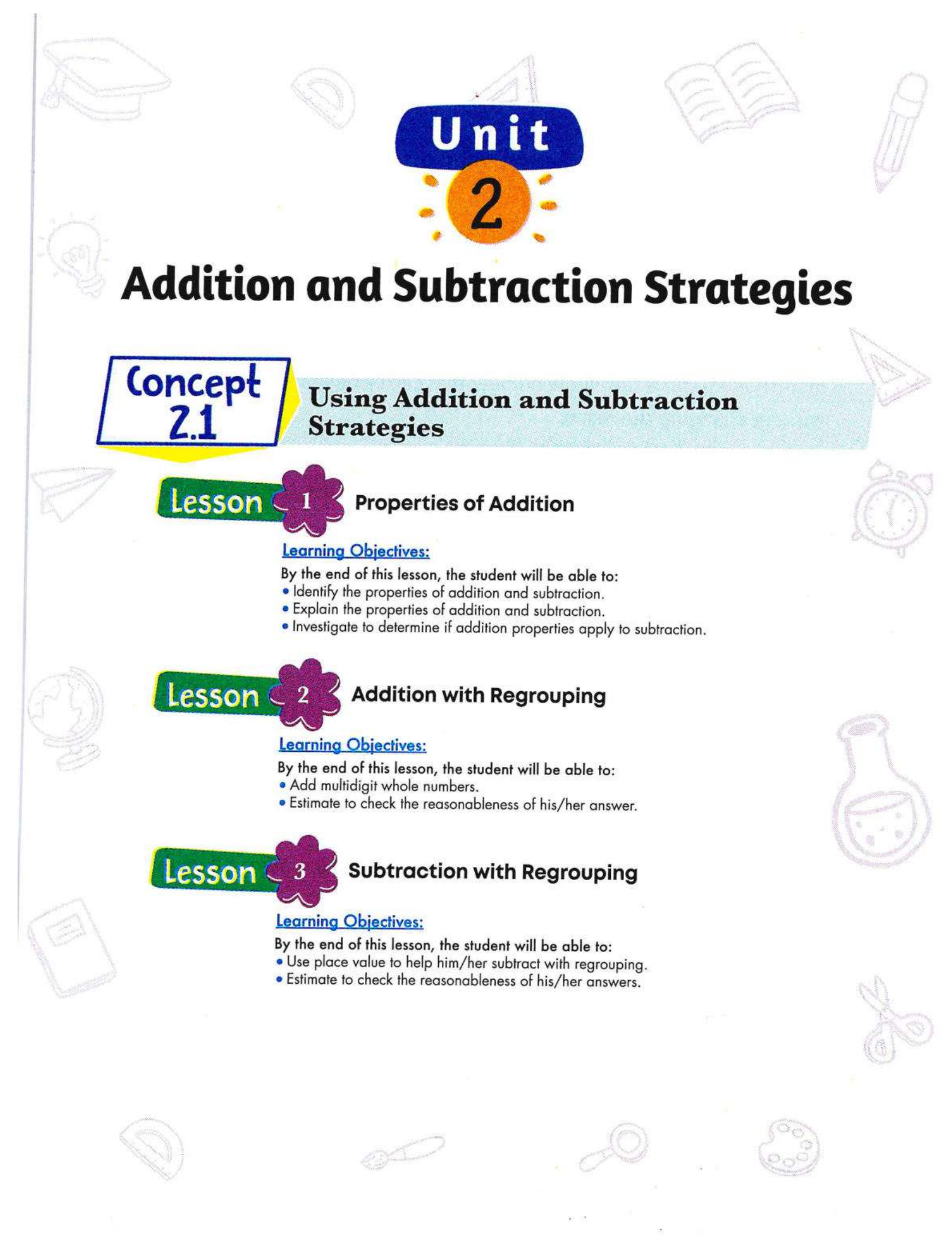
3 Write down the **midpoint** of the number line. Then, locate each number on the number line and round each number:

- a $6,700 \approx$
 (To the nearest **Thousand**)



- b $9,340 \approx$
 (To the nearest **Hundred**)





Unit

2

Addition and Subtraction Strategies

Concept 2.1

Using Addition and Subtraction Strategies

Lesson

1

Properties of Addition

Learning Objectives:

By the end of this lesson, the student will be able to:

- Identify the properties of addition and subtraction.
- Explain the properties of addition and subtraction.
- Investigate to determine if addition properties apply to subtraction.

Lesson

2

Addition with Regrouping

Learning Objectives:

By the end of this lesson, the student will be able to:

- Add multidigit whole numbers.
- Estimate to check the reasonableness of his/her answer.

Lesson

3

Subtraction with Regrouping

Learning Objectives:

By the end of this lesson, the student will be able to:

- Use place value to help him/her subtract with regrouping.
- Estimate to check the reasonableness of his/her answers.

1

Lesson

Properties of Addition

Properties of Addition

First: Additive Identity Property:

- **Identity element:** is the whole number that can be added to any whole number **without changing the result.**

The **Additive Identity Element** is **zero**.

Examples: $24,256 + 0 = 24,256$, $0 + 3,648 = 3,648$

Second: Commutative Property:

- The sum of two numbers **does not change** by switching their **order**.

Example: $24 + 12 = 36$ and $12 + 24 = 36$

So, $24 + 12 = 12 + 24$

Third: Associative Property:

- If more than two numbers are added, we can add them in **any order**.

Example: Add: $10 + 5 + 30$

$$\begin{aligned} & 10 + 5 + 30 \\ &= (10 + 5) + 30 \\ &= 15 + 30 \\ &= 45 \end{aligned}$$

$$\begin{aligned} & 10 + 5 + 30 \\ &= 10 + (5 + 30) \\ &= 10 + 35 \\ &= 45 \end{aligned}$$

So, $10 + 5 + 30 = (10 + 5) + 30 = 10 + (5 + 30)$

Property	خاصية	Commutative	إبدال	Identity	محاييد	Associative	تجميع / دمج
----------	-------	-------------	-------	----------	--------	-------------	-------------

Practice 1

Complete using (Identity Element or Commutative or Associative):

a $5 + 3 = 3 + 5$

"..... Property"

b $54 + 0 = 54$

"..... Property"

c $7 + 9 + (3 + 4) = (7 + 9) + 3 + 4$

"..... Property"

d $254 + 328 = 328 + 254$

"..... Property"

e $24,125 + 0 = 24,125$

"..... Property"

f $(120 + 147) + 250 = 120 + (147 + 250)$

"..... Property"

Practice 2

Complete the following and write the addition property used:

a $5 + 3 = \dots + 5$

"..... Property"

b $28 + \dots = 17 + 28$

"..... Property"

c $5 + 0 = \dots$

"..... Property"

d $\dots + 215 = 215$

"..... Property"

e $(8 + 3) + 4 = 8 + (\dots + 4)$

"..... Property"

f $(25 + 35) + 40 + 20 = \dots + (35 + 40) + \dots$

"..... Property"

Practice 3

Complete to find the sum. Then, name the property used:

a $12 + 36 + 88 = 12 + \dots + 36$

"..... Property"

$= (12 + 88) + \dots$

"..... Property"

$= \dots + \dots = \dots$

b $10 + 25 + 45 + 75$

$= 10 + 45 + \dots + 75$

"..... Property"

$= (\dots + \dots) + (\dots + \dots)$

"..... Property"

$= \dots + \dots = \dots$

c $15 + 0 + 25 = (\dots + \dots) + 25$

"..... Property"

$= \dots + \dots = \dots$

"..... Property"

Properties of Subtraction

First: Identity Element Property:

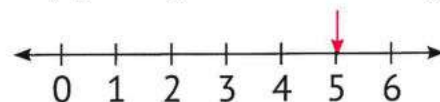
– To subtract: $5 - 0$

$$5 - 0 = 5$$

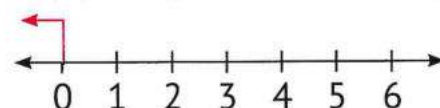
– To subtract: $0 - 5$

$0 - 5$ is less than zero.

(By using the number line)



(By using the number line)



Therefore, the Identity Element Property is not applicable to subtraction.
"Subtraction has no identity."

Second: Commutative Property:

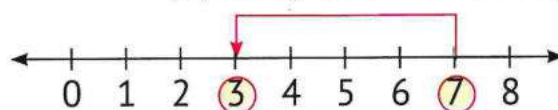
– To subtract: $7 - 4$

$$7 - 4 = 3$$

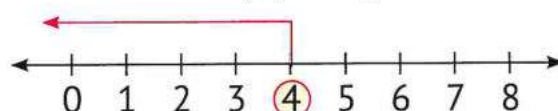
– To subtract: $4 - 7$

$4 - 7$ is less than zero.

(By using the number line)



(By using the number line)



$$7 - 4 \neq 4 - 7$$

Therefore, the Commutative Property is not applicable to subtraction.

Third: Associative Property:

– To subtract: $9 - 6 - 3$

– Subtraction can be done using parentheses, as follows:

$$(9 - 6) - 3 = 3 - 3 = 0 \quad \text{or} \quad 9 - (6 - 3) = 9 - 3 = 6$$

$$\text{So, } (9 - 6) - 3 \neq 9 - (6 - 3)$$

Therefore, the Associative Property is not applicable to subtraction.

Quiz?

10

1 Complete using (Additive Identity – Commutative – Associative):

a $(5 + 6) + 3 = 6 + (5 + 3)$ "..... Property"

b $85 + 5 = 5 + 85$ "..... Property"

c $8,152 + 0 = 8,152$ "..... Property"

2 Choose the correct answer:

a $76 + 24 = \dots\dots\dots + 76$ (100 or 76 or 24 or 52)

b $45 + \dots\dots\dots = 45$ (90 or 0 or 100 or 10)

c $7 + (6 + 4) = (7 + 6) + \dots\dots\dots$ (7 or 6 or 4 or 10)

3 Complete to find the sum. Then, write the property you used:

a $78 + 45 + 22 = 78 + \dots\dots\dots + 45$ "..... Property"

$= (\dots\dots\dots + \dots\dots\dots) + \dots\dots\dots$ "..... Property"

$= \dots\dots\dots + \dots\dots\dots = \dots\dots\dots$

b $5 + 7 + 8 + 3 = 5 + 8 + \dots\dots\dots + \dots\dots\dots$ "..... Property"

$= (\dots\dots\dots + \dots\dots\dots) + (\dots\dots\dots + \dots\dots\dots)$

"..... Property"

$= \dots\dots\dots + \dots\dots\dots = \dots\dots\dots$

2

Lesson

Addition with Regrouping

- To add two numbers, we start by adding the **Ones**, then the **Tens**, then the **Hundreds**, and **so on** in order.
- Sometimes we need to **regroup** (rename).

Example: Add:

a $543,267 + 189,452 = 732,719$

Horizontally

Vertically

1	1	1							
5	4	3	,	2	6	7			
+	1	8	9	,	4	5	2		
7	3	2	,	7	1	9			

Sum

b $125,468 + 876,536 = 1,002,004$

Horizontally

Vertically

1	1	1	1	1					
1	2	5	,	4	6	8			
+	8	7	6	,	5	3	6		
1	0	0	,	2	0	0	4		

Sum

c $9,999,999 + 1 = 10,000,000$

Horizontally

Vertically

1	1	1	1	1	1	1			
9	9	9	,	9	9	9			
+							1		
1	0	0	,	0	0	0	0	0	0

Sum

Practice 1 Find the result of each of the following:

a $52,765$

$+ 37,135$

b $8,675,568$

$+ 354,722$

c $7,782,056$

$+ 2,217,944$

d $4,836 + 6,274 =$

e $999,999 + 6 =$

f $963,452,793 + 47,058,207 =$

Using the Rounding Strategy to Estimate the Sum

NOTES

$4,528 + 3,834 = 8,362$

- By **rounding** the two numbers to the nearest **10**: $4,530 + 3,830 = 8,360$
- By **rounding** the two numbers to the nearest **100**: $4,500 + 3,800 = 8,300$
- By **rounding** the two numbers to the nearest **1,000**: $5,000 + 4,000 = 9,000$

Looking at the **sum** in each case, we find that the **closest estimate to the actual sum** is to the **nearest Ten**.

Practice 2 Complete the following table:

Determine which of the estimates is **closest** to the **actual sum** and tick it.

	Problem	To the Nearest 10	To the Nearest 100	To the Nearest 1,000
a	$7,684$ $+ 6,418$	$+$	$+$	$+$
		()	()	()

	Problem	To the Nearest 10	To the Nearest 100	To the Nearest 1,000
b	$\begin{array}{r} 2,589 \\ + 7,283 \\ \hline \end{array}$	$\begin{array}{r} \\ + \\ \hline \end{array}$	$\begin{array}{r} \\ + \\ \hline \end{array}$	$\begin{array}{r} \\ + \\ \hline \end{array}$
		()	()	()

Practice 3

An ant colony goes on a walk through the woods in search of food. On this journey, the ants form two bridges; the first bridge consists of 142 ants, and the second bridge consists of 165 ants. What is the number of ants required for both bridges? Explain your steps, and then check the reasonableness of your answer.

Estimate using one of the **rounding strategies**:

Actual Answer:

Practice 4

Ehab and Abeer are traveling from Aswan to Alexandria. They will travel 383 km on the first day to Assiut. On the second day, they will travel 462 km from Assiut to Alexandria. How many kilometers will they travel in the two days?

Estimate using one of the **rounding strategies**:

Actual Answer:

Practice 5

The speed of the fighter plane reaches **2,420** kilometers per hour. If it moves for two hours at this speed, how far will it travel?

Estimate using one of the **rounding strategies**:

.....

.....

Actual Answer:

.....

Quiz?

10

1 Find the result:

a $68,102 + 12,498 =$

b $75,025 + 25,975 =$

c $457 + 237 + 146 =$

2 Choose the correct answer:

a $2,563 + 5,384 =$ + 947 (70 or 700 or 7,000 or 70,000)

b $451 + 924$ $1,247 + 128$ (< or = or >)

c $6,282 + 7,789 =$
(14 + 71 or 140 + 71 or 1,400 + 71 or 14,000 + 71)

3 Noha bought a TV for **13,450** pounds and a fan for **1,690** pounds. How much money did she pay?

.....

4 Estimate using rounding to the nearest **100**:

$45,963 + 20,449 \rightarrow (\text{.....} + \text{.....} = \text{.....})$

3

Lesson

Subtraction with Regrouping

Remember

$$\begin{array}{c} \text{8} \\ \text{Minuend} \end{array} - \begin{array}{c} \text{3} \\ \text{Subtrahend} \end{array} = \begin{array}{c} \text{5} \\ \text{Difference} \end{array}$$

- To subtract two numbers, we start by subtracting the **Ones**, then the **Tens**, then the **Hundreds**, and **so on** in order.
- Sometimes we need to **regroup** (rename).

Example: Subtract:

a $\overset{5}{6}\overset{15}{5}, \overset{3}{8}\overset{15}{4} \overset{5}{5} - 37,428 = 28,417$

Horizontally

Vertically

$$\begin{array}{r} \overset{5}{6}\overset{15}{5}, \overset{3}{8}\overset{15}{4} \overset{5}{5} \\ - 37,428 \\ \hline 28,417 \end{array}$$

Difference

b $\overset{9}{0}\overset{14}{1}, \overset{9}{5}\overset{10}{0}\overset{10}{0}, \overset{6}{7}\overset{10}{0} \overset{16}{6} - 894,329 = 606,377$

Horizontally

Vertically

$$\begin{array}{r} \overset{9}{0}\overset{14}{1}, \overset{9}{5}\overset{10}{0}\overset{10}{0}, \overset{6}{7}\overset{10}{0} \overset{16}{6} \\ - 894,329 \\ \hline 606,377 \end{array}$$

Difference

c $\overset{9}{0}\overset{9}{1}, \overset{9}{0}\overset{9}{0}\overset{9}{0}\overset{9}{0}, \overset{9}{0}\overset{9}{0}\overset{9}{0} \overset{10}{0} - 1 = 9,999,999$

Horizontally

Vertically

$$\begin{array}{r} \overset{9}{0}\overset{9}{1}, \overset{9}{0}\overset{9}{0}\overset{9}{0}\overset{9}{0}, \overset{9}{0}\overset{9}{0}\overset{9}{0} \overset{10}{0} \\ - 1 \\ \hline 9,999,999 \end{array}$$

Difference

Practice 1 Find the result of each of the following:

a $78,356$

$- 59,173$

b $2,109,539$

$- 1,173,289$

c $6,005,320$

$- 1,852,275$

d $88,000 - 56,758 =$

e $1,000,000 - 999,995 =$

f $654,209,027 - 123,372,576 =$

Using the Rounding Strategy to Estimate the Difference

NOTES

$6,949 - 2,476 = 4,473$

- By **rounding** the two numbers to the nearest **10**: $6,950 - 2,480 = 4,470$
- By **rounding** the two numbers to the nearest **100**: $6,900 - 2,500 = 4,400$
- By **rounding** the two numbers to the nearest **1,000**: $7,000 - 2,000 = 5,000$

Looking at the **difference** in each case, we find that the **closest estimate to the actual difference is to the nearest ten.**

Practice 2 Complete the following table:

Determine which of the estimates is **closest** to the **actual difference** and tick it.

	Problem	To the Nearest 10	To the Nearest 100	To the Nearest 1,000
a	$56,064$ $- 42,765$	$.....$ $-$	$.....$ $-$	$.....$ $-$
		$..... ()$	$..... ()$	$..... ()$

	Problem	To the Nearest 10	To the Nearest 100	To the Nearest 1,000
6	45,012	.....	.....	.....
	– 35,959	–	–	–
		 ()	 ()	 ()

Practice 3 – It takes 15,422,140 ants to carry an adult of 77 kg.

An average 10-year-old child weighing 32 kg requires 6,350,300 ants. How many ants are needed to carry an adult **minus** a 10-year-old child?

– Round each number to the nearest **Million**, then solve the problem again.

Practice 4 An ant colony contains 255,000 ants, and another colony contains 56,200 ants. What is the **difference** between the number of ants in the two colonies?

Practice 5 An ant on piece of wood wanted to cross a river that was 3,548 cm wide. The ant had already covered 1,672 cm. What is the **remaining** distance that the ant should cover to arrive at the other side?

Practice 6 There are two colonies of ants; the first colony has about 1,267 ants, and the second colony has 3,452 ants.

How many more ants are there in the second colony than in the first colony?

Quiz?

10

1 Find the result:

- a $98,025 - 15,927 =$
- b $200,500 - 125,355 =$
- c $10,000,000 - 999,999 =$

2 Choose the correct answer:

- a $87,754 - 26,854 =$ - 11,000
(60,900 or 61,900 or 71,900 or 60,000)
- b $701 - 324$ $640 - 115$ (< or = or >)
- c $40,000 - 999 =$
(39 + 1 or 390 + 1 or 3,900 + 1 or 39,000 + 1)

3 Alaa had 15,620 pounds. She bought a PC for 7,550 pounds. How much money does she have left?

4 Estimate using rounding to the nearest 10, then subtract:

$18,884 - 9,498 \rightarrow (\quad - \quad = \quad)$

Unit

2

Addition and Subtraction Strategies

Concept 2.2

Solving Multistep Problems

Lessons



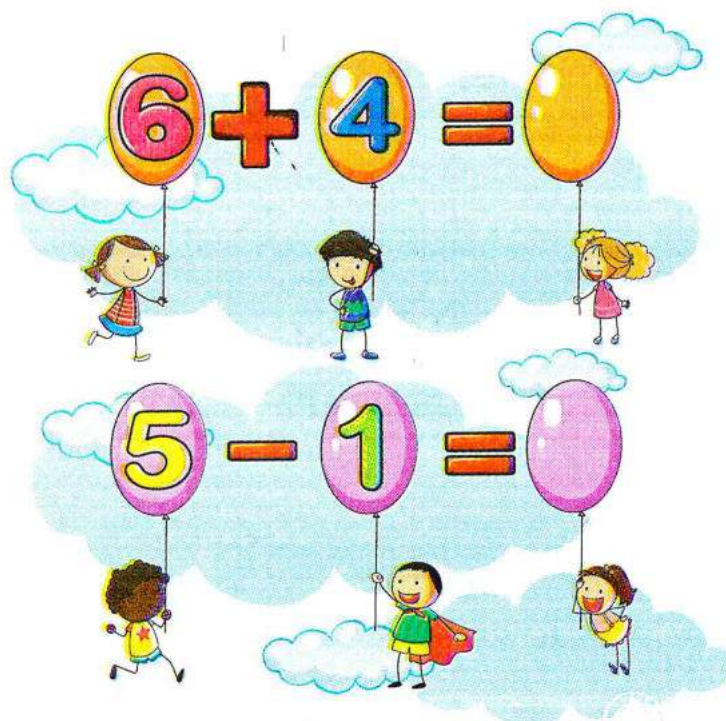
4&5

Bar Models, Variables, and Story Problems
Solving Multistep Story Problems with Addition
and Subtraction

Learning Objectives:

By the end of these lessons, the student will be able to:

- Use letters to represent unknown quantities in equations.
- Use bar models to represent and solve story problems.
- Solve equations that include variables.
- Solve multistep story problems.
- Explain how he/she solved multistep story problems.



4&5 Lessons

Bar Models, Variables, and Story Problems Solving Multistep Story Problems with Addition and Subtraction

Bar Model: (Part-Part-Whole)

- It is a diagram that represents the relationship between the **whole** and the **part**.

$$\text{Whole} = \text{Part 1} + \text{Part 2}$$



$$\text{Part 1} = \text{Whole} - \text{Part 2}$$



$$\text{Part 2} = \text{Whole} - \text{Part 1}$$



Equation:

- It is a **mathematical formula** in which we symbolize the **unknown number** with **one of the letters** (such as: x , y , a , ... etc).
- It is called a **variable** because its value is not fixed and changes from one question to another.

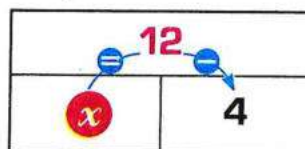
Examples: $x + 3 = 9$ $25 - y = 10$

NOTE

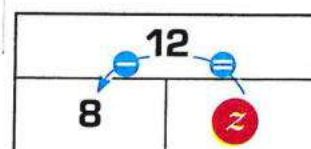
- From the following bar models, we conclude that:



$$y = 8 + 4 = 12$$



$$x = 12 - 4 = 8$$



$$z = 12 - 8 = 4$$

Bar model

نموذج شريطي

Variable

متغير Equation

معادلة

Example:

Create a bar model to solve the following equation:

$$250 - x = 80$$

Solution: $x = 250 - 80$

$$x = 170$$

Bar Model

250	
80	x

Practice 1Create **bar models** to solve the following equations:

a $7,120 - x = 5,200$

Bar Model

Solution:

b $y - 22,120 = 18,850$

Bar Model

Solution:

c $812 + z = 6,000$

Bar Model

Solution:

d $w + 4,455 = 7,600$

Bar Model

Solution:**Variables and Story Problems****Steps for solving story problems with a variable:**

- 1 Identify the **parts**, the **whole**, and the **unknowns**.
- 2 Draw a **bar model** and put the information you got into it, then use a **variable** to represent the unknown.
- 3 Write an **equation** using the bar model.
- 4 Find the **value** of the variable (solve the equation).

Example:

There are **45** students in your class; **15** of them were absent on one day. How many students are present on that day?

Solution:

$$15 + x = 45$$

$$x = 45 - 15 = 30$$

45	
15	x

The whole is: **45**

Part 1 is: **15 (Absent)**

Part 2 is: **Unknown**

Practice 2

Read the following story problems. Create an **equation** and a **bar model** for each problem, then find the solution.

- a Ahmed had **8,500** pounds, from which he bought a television set for **6,250** pounds. How much money does Ahmed have left?

Equation:

Solution:

Bar Model

.....	
.....	

- b A primary school has **2,050** students. **985** of them are girls. How many boys are there in this school?

Equation:

Solution:

Bar Model

.....	
.....	

- c A poultry farm had **4,200** chickens. **3,350** chickens were sold in a week. How many chickens are left on the farm?

Equation:

Solution:

Bar Model

.....	
.....	

- d Ahmed bought a car for **90,950** pounds and a house for his family for **750,500** pounds. How much money did Ahmed spend to buy the car and the house?

Equation:

Solution:

Bar Model

.....	
.....	

Steps for solving story problems:

- 1 Circle the **important numbers** and **data**.
- 2 Underline the **questions**.
- 3 Draw a square around the **solution keys**.
- 4 Check the following information:
 - What is **known**?
 - What is **unknown**?
 - What is the **hidden question**?
- 5 Use the **knowns** to answer the hidden question.
- 6 Use the **new information** to solve the problem and **find the unknown**.

Example:

Nada has **7,245** piasters, and Ahmed has **9,372** piasters. **What is the sum of what Nada and Ahmed have together?**

- **Known:** Ahmed's and Nada's piasters
- **Unknown:** The sum
- **Hidden question:** Add the two numbers.

NOTE

- **1 pound = 100 piasters.**

Example:

Alaa went to a clothing store and bought a **shirt** for **260** pounds, **pants** for **430** pounds, and **shoes** for **330** pounds. If Alaa had **1,300** pounds, how much money does he have **left**?

Solution:

$$\begin{aligned} \text{Alaa paid} &= 260 + 430 + 330 \\ &= 1,020 \text{ pounds.} \end{aligned}$$

$$\begin{aligned} \text{The amount he has left} \\ &= 1,300 - 1,020 = 280 \text{ pounds.} \end{aligned}$$

Information:

- **Purchases:**
 - Shirt for 260 pounds
 - Pants for 430 pounds
 - Shoes for 330 pounds
- Alaa had an amount of 1,300 Pounds.
- **Unknown:** The remaining amount with Alaa
- **Hidden question:** What is the total money of what Alaa paid?

or

What is the value of the purchases that Alaa bought altogether?

Practice 3 The length of the Nile River is about **6,853** kilometers. Karim and his family are traveling across the Nile from one side to the other. If they traveled **1,075** kilometers in January, then **1,120** kilometers in February, and then **1,325** kilometers in March, how many kilometers are left for them to travel to reach the other side?

Solution:

Practice 4 The Great Pyramids had **59,000** visitors on Monday, **27,525** visitors on Tuesday, and **32,975** visitors on Wednesday. The number of visitors is expected to be **150,000** from Monday to Thursday. How many visitors have to come on Thursday to reach that number?

Solution:

Practice 5 Mansoura has a population of **420,195**. The population of Helwan is **320,000**, and the population of New Cairo is **200,000**. How many more people do Helwan and New Cairo have together than Mansoura?

Solution:

Quiz?

10

1 Create a **bar model** to solve the following equations:

a $14,000 - n = 6,000$

Solution:

b $502 + c = 922$

Solution:

c $m - 24 = 50$

Solution:

2 Choose the correct answer:

a If $x - 25 = 40$, then $x =$ (65 or 25 or 15 or 100)

b The bar model that represents the equation " $15 - x = 7$ " is

(

15	
x	7

 or

x	
15	7

 or

x	
7	15

 or

8	
7	x

)

c The equation that represents the following bar model is

($m = 20 + 40$ or $20 + m = 40$ or $20 - m = 40$ or $20 \times m = 40$)

40	
20	m

3 Eman had **900** pounds. She spent **650** pounds.
How much money was **left** with her? Use a bar model.

Equation:

Solution:

Unit

3

Concepts of Measurement

Concept 3.1

Metric Measurement

Lesson 1 Measuring Length

Learning Objectives:

By the end of this lesson, the student will be able to:

- Explain the relationship between metric units of length.
- Convert between metric units of length.



Lesson 2 Measuring Mass

Learning Objectives:

By the end of this lesson, the student will be able to:

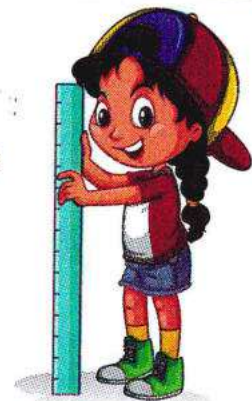
- Explain the relationship between metric units of mass.
- Convert between metric units of mass.

Lesson 3 Units of Capacity

Learning Objectives:

By the end of this lesson, the student will be able to:

- Explain the relationship between metric units of capacity.
- Convert between metric units of capacity.



1

Lesson

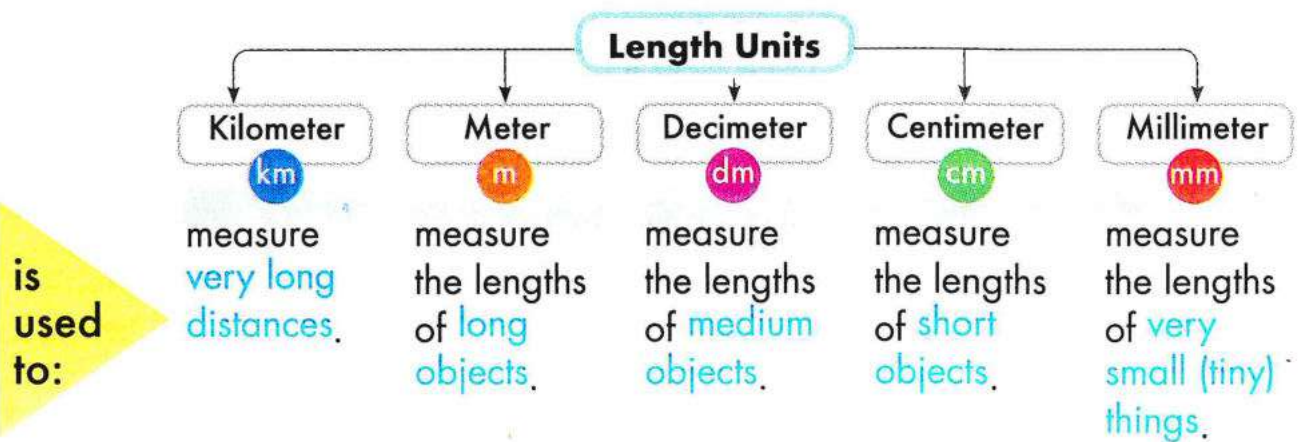
Measuring Length

Metric System of Measurement

Meter, Kilogram, Second

This system depends on the following units as the basis for measurement:

- A **meter** is the unit used to measure **length**. A **kilogram** is the unit used to measure **weight**. A **second** is the unit used to measure **time**. A **liter** is the unit used to measure **capacity**.



Examples:



The distance between cities

King
↓
Kilometer

Buildings heights

Mickey
↓
Meter

Carpet length

Drinks
↓
Decimeter

Door height

Book length

Bottle height

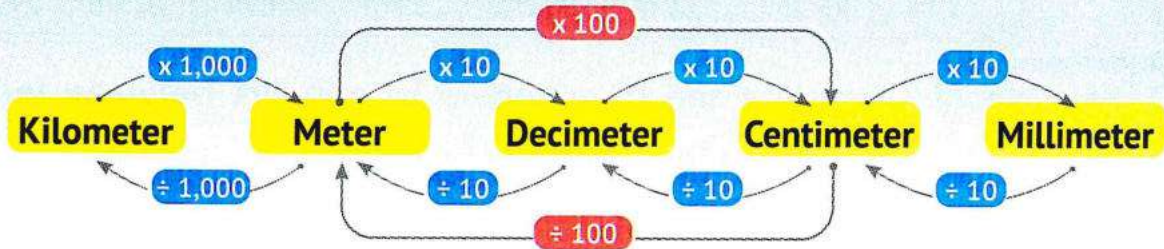
Chocolate
↓
Centimeter

Small insects

Milk
↓
Millimeter

Length	الطول	Unit	وحدة	Metric System	النظام المتري
--------	-------	------	------	---------------	---------------

The Relationship Between Units of Length



► From the previous, we find that:

- 1 kilometer = 1,000 meters
- 1 meter = 10 decimeters • 1 meter = 100 centimeters • 1 meter = 1,000 millimeters
- 1 decimeter = 10 centimeters • 1 decimeter = 100 millimeters
- 1 centimeter = 10 millimeters

Practice 1 Choose the best unit for measuring each of the following:

- a A child's height. (Kilometers, Meters, Centimeters, Millimeters)
- b The distance between your house and the club. (Kilometers, Meters, Centimeters, Millimeters)
- c The length of an insect. (Kilometers, Meters, Centimeters, Millimeters)
- d The distance between Cairo and Alexandria. (Kilometers, Meters, Centimeters, Millimeters)
- e The height of a school building. (Kilometers, Meters, Centimeters, Millimeters)

Practice 2 Complete each of the following tables:

a	Kilometer	Meter	b	Meter	Centimeter	c	Centimeter	Millimeter
	5			9			5	
		6,000			200			90
	20				3,000			700
		35,000		400			60	

Examples:

125 cm		2,360 cm		6,820 m		20,290 m	
1 m	25 cm	23 m	60 cm	6 km	820 m	20 km	290 m

Practice 3 Complete the bar models to **convert between length units**, as in the previous examples:

a	<table><tr><td colspan="2">..... cm</td></tr><tr><td>8 m</td><td>40 cm</td></tr></table>	 cm		8 m	40 cm	b	<table><tr><td colspan="2">..... cm</td></tr><tr><td>50 m</td><td>20 cm</td></tr></table>	 cm		50 m	20 cm	c	<table><tr><td colspan="2">..... m</td></tr><tr><td>7 km</td><td>70 m</td></tr></table>	 m		7 km	70 m	d	<table><tr><td colspan="2">..... m</td></tr><tr><td>15 km</td><td>120 m</td></tr></table>	 m		15 km	120 m
..... cm																							
8 m	40 cm																						
..... cm																							
50 m	20 cm																						
..... m																							
7 km	70 m																						
..... m																							
15 km	120 m																						
e	<table><tr><td colspan="2">372 cm</td></tr><tr><td>..... m</td><td>..... cm</td></tr></table>	372 cm		 m	 cm	f	<table><tr><td colspan="2">1,005 cm</td></tr><tr><td>..... m</td><td>..... cm</td></tr></table>	1,005 cm		 m	 cm	g	<table><tr><td colspan="2">9,300 m</td></tr><tr><td>..... km</td><td>..... m</td></tr></table>	9,300 m		 km	 m	h	<table><tr><td colspan="2">70,020 m</td></tr><tr><td>..... km</td><td>..... m</td></tr></table>	70,020 m		 km	 m
372 cm																							
..... m	 cm																						
1,005 cm																							
..... m	 cm																						
9,300 m																							
..... km	 m																						
70,020 m																							
..... km	 m																						

Practice 4 Complete each of the following:

- a 54 m = cm b 230 m = cm
c 23 km = m d 600 km = m
e 700,000 cm = m f 86,000 cm = m
g 9,000,000 m = km h 430,000 m = km

Practice 5 Complete each of the following:

- a 6 m + 25 cm = cm b 90 m + 32 cm = cm
c 4 km + 138 m = m d 14 km + 225 m = m
e 425 cm = m + cm f 2,003 cm = m + cm
g 7,529 m = km + m h 90,050 cm = m + cm

Practice 6 If the length of one bee is about **1 cm**, how long is a row of **100,000 bees**?

Row length = cm = m = km

Practice 7 If Ahmed is **150 cm** tall, how tall is Ahmed in **decimeters** and **millimeters**?

150 cm = dm = mm

Practice 8 Sameh practices walking. Usually, he walks **50 meters** per **minute**.

– How many minutes does Sameh need to walk **500** meters?

– What is the distance that Sameh walks in **half an hour**?

Practice 9 Sameh and Rana practice walking. If Sameh walked a distance of **5 km** and Rana walked a distance of **7 km**. Who walked for the **longest** distance? Calculate the **difference** between the two distances in **meters**.



10

1 Complete:

- a 42 km = m b 20,000 cm = m
c 50,020 km = km + m
d 21 m + 9 cm = cm

2 Choose the best unit of length to measure:

(Kilometers, Meters, Centimeters, or Millimeters)

- a The **height** of a tree. (.....)
b The **distance** between two cities. (.....)
c The **height** of a man. (.....)
d The **length** of an ant. (.....)

3 The distance between Nada's house and her club is **3 km**.

What is the distance in **meters**, **decimeters**, and **centimeters**?

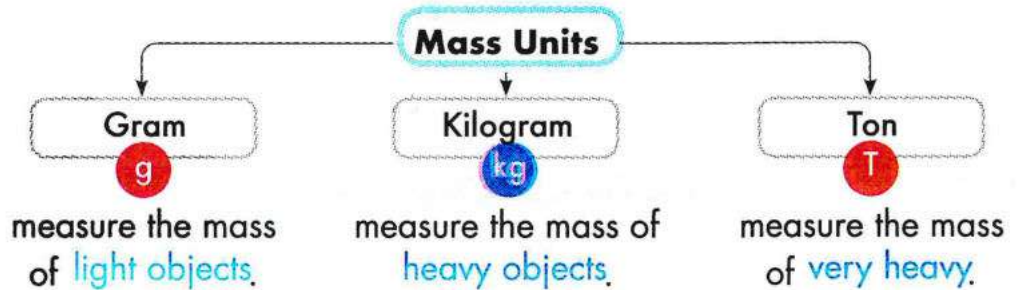
3 km = m = dm = cm

2

Lesson

Measuring Mass

is used to:



Examples:

- Balloons
- Rings
- Meat
- Vegetables
- Steel objects
- Pens
- Humans
- Trucks

Practice 1 Choose the **best mass unit** for each of the following:

- a The mass of a **child** (Kilograms, Grams)
- b The mass of a **ring** (Kilograms, Grams)
- c The mass of a **pencil** (Kilograms, Grams)
- d The mass of a **dog** (Kilograms, Grams)

The Relationship Between Units of Mass

$$1 \text{ ton} = 1,000 \text{ kilogram}$$

$$1 \text{ kilogram} = 1,000 \text{ grams}$$



Practice 2 Complete each of the following tables:

a

Gram	Kilogram
2,000	.....
.....	15
61,000	.....

b

Kilogram	Ton
.....	9
5,000	.....
.....	12

Mass

كتلة

Weight

وزن

Practice 3

Complete the bar models to **convert** between **mass units**, as in the example:

Example:

60,030 grams	
60 kg	30 g

8,235 g	
8 kg	235 g

10,942 kg	
10 tons	942 kg

a

..... g	
9 kg	105 g

b

..... grams	
32 kg	8 g

c

8,235 kg	
..... tons	 kg

d

41,623 kg	
..... tons	 kg

Practice 4

Complete each of the following:

- a 6 kilograms = grams b 20 tons = kilograms
 c 90,000 grams = kilograms d 50,000 grams = kilograms
 e 3,624 kg = tons + kg f 67,026 g = kg + g
 g 5 tons + 583 kg = kg h 50 kg + 9 g = g

Practice 5

If Shaimaa's weight is **45 kilograms and 200 grams**, rewrite the weight in **grams**.

Practice 6

Adam bought **5 kilograms and 500 grams** of oranges. Then, he bought **7 kilograms** of oranges. Rewrite these weights in **grams**, then find the **total weight** of what Adam bought.

Quiz?

10

1 Complete:

- a 42 kg = g b 50,000 g = kg
c 10,070 g = kg + g

2 Choose the correct answer:

- a The best unit to measure the mass of a human is the
(kilogram or gram or kilometer or liter)
b 30 kg, 5 g = g (35 or 305 or 3,005 or 30,005)
c 45 kg 4 kg + 500 g (< or = or >)

3 The weight of Ahmed's cat is 5 kg and 300 grams, and the weight of Ola's dog is 8 kg and 700 grams. What is the difference between the weights of the two pets in grams?

في
ICT
للمصف الرابع الابتدائي



3 Lesson

Units of Capacity

- Capacity is the amount of liquid that can be put into a container until it is full.

is used to:

Liter

L

measure the capacity of
large containers.

Milliliter

mL

measure the capacity of
small containers.

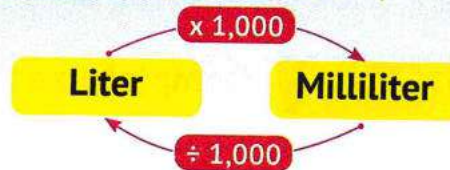
Examples:

- Swimming pool
- Large water bottle

- Tea cup
- Perfume bottle

The Relationship Between Units of Capacity

1 liter = 1,000 milliliters



Practice 1

Complete the following tables:

a

Liter	Milliliter
50	.....
.....	200,000
520,000	.....

b

Milliliter	Liter
.....	8
7,000	.....
.....	18

Volume

حجم

Capacity

سعة

Practice 2 Complete the bar models to **convert** between **capacity units**, as in the example:

Example:

20,008 milliliters	
20 L	8 mL

7,302 milliliters	
7 L	302 mL

a

..... mL	
35 L	20 mL

b

..... mL	
9 L	252 mL

c

3,022 mL	
..... L	 mL

d

200,200 mL	
..... L	 mL

Practice 3 Complete each of the following:

- a 8 liters + 2,547 milliliters = mL
- b 10 liters - 300 mL = mL
- c 15 L, 235 mL + 2 L, 20 mL = mL
- d 24 L, 150 mL - 4 L, 100 mL = mL

Practice 4 Complete each of the following:

- a 3 liters = milliliters
- b 50 liters = milliliters
- c 700,000 milliliters = liters
- d 15,000 milliliters = liters
- e 7,320 milliliters = liters + milliliters
- f 30,025 milliliters = liters + milliliters
- g 11 liters + 11 milliliters = milliliters
- h 10 liters + 2 milliliters = milliliters

Practice 5

The car's fuel tank is filled with **45 liters** of gasoline. If the tank contains **30 liters and 250 milliliters**, how much gasoline do we need to fill the tank?

45 liters = milliliters

30 liters, 250 milliliters = milliliters

– The amount of gasoline =

Practice 6

Islam has **2 liters and 500 milliliters** of orange juice and **one liter and 250 milliliters** of apple juice. What is the **total amount** of juice that Islam has?

2 liters, 500 milliliters = milliliters

1 liter, 250 milliliters = milliliters

– The amount of juice =

Practice 7

A bottle contains **two liters** of soda water. Adel drank **320 milliliters** of it, and Samah drank **250 milliliters**. How much soda water is left in the bottle?

– Use the following **bar model** to solve:

2 liters		
230 mL	250 mL	 mL

2 liters = milliliters

– The amount of soda water left =



1 Complete:

- a $20 \text{ L} + 20 \text{ mL} = \dots\dots\dots \text{ mL}$
- b $100,050 \text{ mL} - 50 \text{ L}, 40 \text{ mL} = \dots\dots\dots \text{ mL}$
- c $41 \text{ L}, 50 \text{ mL} + 2 \text{ L}, 210 \text{ mL} = \dots\dots\dots \text{ mL}$

2 Choose the correct answer:

- a $50 \text{ L} + 5 \text{ mL} = \dots\dots\dots \text{ mL}$ (55 or 505 or 5,005 or 50,005)
- b $25,000 \text{ mL} - 15,000 \text{ mL} = \dots\dots\dots \text{ L}$ (10 or 100 or 1,000 or 10,000)
- c 24 L $18 \text{ mL} + 6,250 \text{ mL}$ (< or = or >)

3 How many bottles are needed to distribute 2 liters of juice if the capacity of one bottle is 200 millilitres?

.....

.....

4 The capacity of a bottle of water is 6 liters. If the bottle holds 4 liters and 200 millilitres, how much more water is needed to fill it?

.....

.....

Unit

3

Concepts of Measurement

Concept 3.2

Measuring Time

Lessons 4&5

Units of Measuring Time Elapsed Time

Learning Objectives:

By the end of these lessons, the student will be able to:

- Tell time to the minute.
- Explain relationships between units of time.
- Explain elapsed time.
- Solve elapsed time problems.
- Explain the strategies he/she uses to solve elapsed time problems.

Lessons 6&7

Applications of Measurements 1&2

Learning Objectives:

By the end of these lessons, the student will be able to:

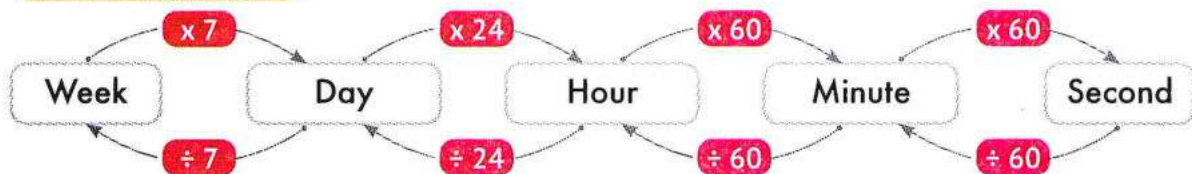
- Add and subtract to solve measurement problems.
- Multiply and divide to solve measurement problems.
- Solve story problems involving measurement.
- Apply a variety of strategies to solve story problems.



4&5 Lessons

Units of Measuring Time Elapsed Time

Remember



- 1 week = 7 days
- 1 hour = 60 minutes

- 1 day = 24 hours
- 1 minute = 60 seconds



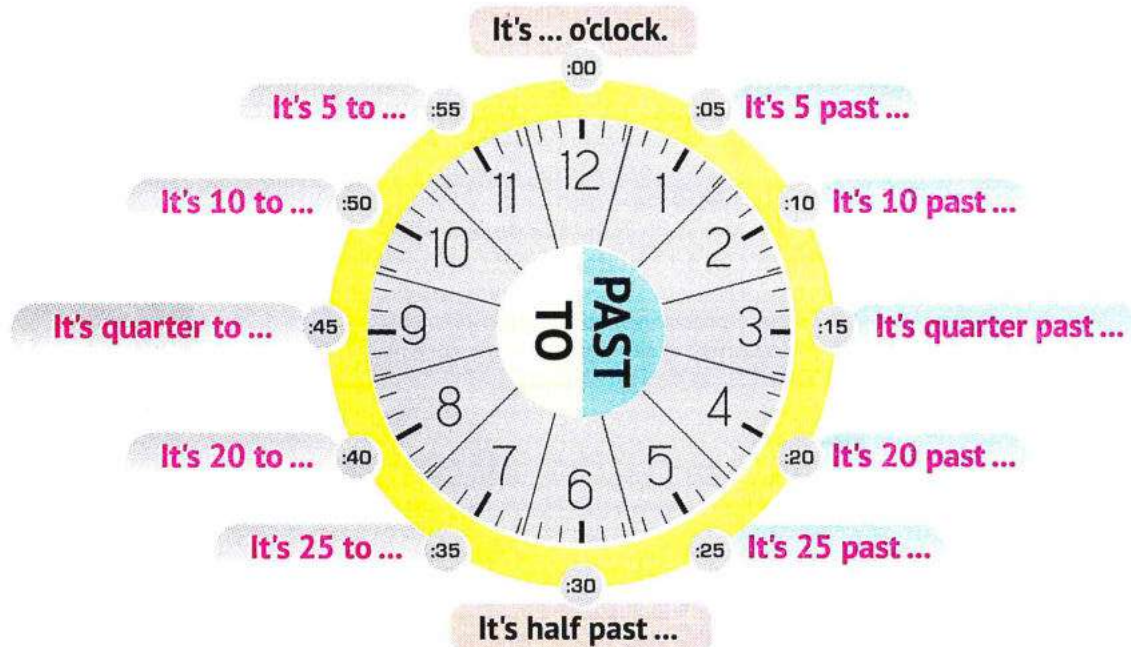
Quarter of an hour
15 minutes



Half of an hour
30 minutes



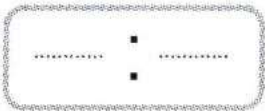
3 quarters of an hour
45 minutes



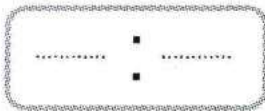
Week	أسبوع	Day	يوم	Hour	ساعة	Minute	دقيقة	Second	ثانية	Time	وقت
------	-------	-----	-----	------	------	--------	-------	--------	-------	------	-----

Practice 1 Complete the following:

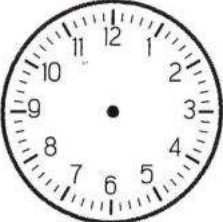
a

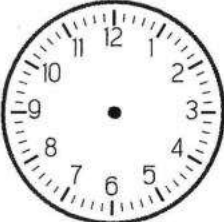
b

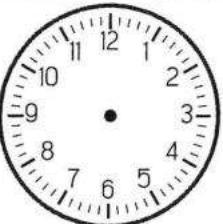
c




d

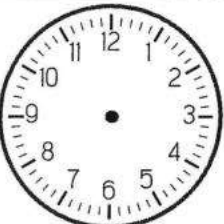



e



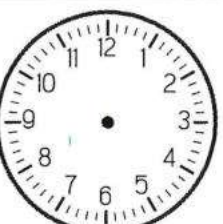
It's half past 4.

f



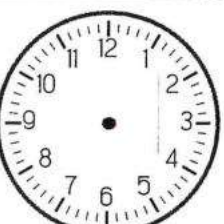
It's 10 to 5.

g



It's 5 past 3.

h



It's quarter past 1.

Practice 2 Complete the following tables:

a	$\times 7$
Week	Day
1	
3	
5	
7	
9	

b	$\times 24$
Day	Hour
1	
4	
6	
8	
10	

c	$\times 60$
Hour	Minute
1	
2	
5	
8	
10	

d	$\times 60$
Minute	Second
1	
3	
6	
7	
9	

Practice 3 Solve the following conversion problems:**Example:** 3 weeks and 5 days = 21 days + 5 days = 26 days

- a 2 weeks and 2 days = + = days
- b 7 days and 10 hours = + = hours
- c 3 days and 15 hours = + = hours
- d 2 hours and 10 minutes = + = minutes
- e 5 hours and 35 minutes = + = minutes
- f 10 minutes and 50 seconds = + = seconds
- g 5 minutes and 5 seconds = + = seconds

Practice 4 Complete the following:**Example:** 20 days = ($\underset{\substack{\downarrow \\ \text{Week}}}{7} + \underset{\substack{\downarrow \\ \text{Week}}}{7} + 6$) days = 2 weeks + 6 days

- a 45 days = weeks + days
- b 50 hours = days + hours
- c 130 hours = days + hours
- d 150 minutes = hours + minutes
- e 330 minutes = hours + minutes
- f 90 seconds = minutes + seconds
- g 605 seconds = minutes + seconds

Practice 5 Emad traveled with his family on a trip to Luxor and Aswan. He spent 3 days in Luxor and 4 days in Aswan. How many hours did Emad spend on this trip?

.....

Practice 6 Salah swam in training for 3 hours on Thursday, 2 hours on Friday, and 4 hours on Saturday. How many minutes did Salah spend training in the three days?

.....

Adding and Subtracting Time

To add and subtract time, look at the following examples:

Example:

To add 4 hours and 25 minutes + 3 hours and 55 minutes,

we add: Minutes + Minutes

Hours + Hours

– In this example, when adding the minutes, we get
 $25 + 55 = 80$ minutes. This is not acceptable because the **largest** number that can be written in the minutes field is **59 minutes**. As **60 minutes** is an hour.

1 hour = 60 minutes

Hours Minutes

4 : 25

+ 3 : 55

~~7~~ : ~~80~~

8 : 20

-60

So, we will regroup 60 minutes and add an hour to the total hours.

4 hours and 25 minutes + 3 hours and 55 minutes = 8 hours and 20 minutes

Or: $4 : 25 + 3 : 55 = \overset{+1}{\cancel{7}} : \underset{-60}{\cancel{80}} = 8 : 20$

Example:

To subtract 9 hours and 20 minutes – 5 hours and 45 minutes,

we subtract : Minutes – Minutes

Hours – Hours

In this example, when subtracting $20 - 45$, this is not acceptable. So, we must follow the **subtraction by regrouping strategy**. We convert 1 hour from hours to 60 minutes, then the minutes become 80 minutes, now we can subtract.

1 hour = 60 minutes

Hours Minutes

8 : 80

~~9~~ : ~~20~~

- 5 : 45

3 : 35

9 hours and 20 minutes – 5 hours and 45 minutes = 3 hours and 35 minutes

Or: $\overset{+60}{\cancel{9}} : \underset{+60}{\cancel{20}} - 5 : 45 = 8 : 80 - 5 : 45 = 3 : 35$

Practice 7 Find the result of each of the following:

a

Hours Minutes

$$\begin{array}{r} 6 : 34 \\ + 2 : 26 \\ \hline \end{array}$$

b

Hours Minutes

$$\begin{array}{r} 4 : 35 \\ + 3 : 35 \\ \hline \end{array}$$

c

Hours Minutes

$$\begin{array}{r} 9 : 25 \\ - 2 : 43 \\ \hline \end{array}$$

d

Hours Minutes

$$\begin{array}{r} 7 : 00 \\ - 2 : 27 \\ \hline \end{array}$$

e

$$7 : 32 + 2 : 18 = \dots\dots\dots$$

f

$$9 : 12 - 2 : 45 = \dots\dots\dots$$

Practice 8 Khadija practices speed-ball for **an hour and 25 minutes**. If she started training at **8:45**, when will she finish her training?

.....

.....

Practice 9 Mahmoud travels from Cairo to Alexandria in a time of **two hours and 45 minutes** in his car. If he starts his journey from Cairo at **3:30**, when will he arrive to Alexandria?

.....

.....

Practice 10 Jana and Maha have **5 hours** to watch **three** movies. The first movie is **1 hour and 22 minutes** long, the second movie is **2 hours and 12 minutes** long, and the third movie is **1 hour and 57 minutes** long. Do the two girls have **enough time** to watch the **three** movies?

(Show your steps.)

Quiz?

10

1 Complete:

- a One week and 2 days = days
- b 2 days and 3 hours = hours
- c 5 minutes and 5 seconds = seconds
- d 18 days = weeks and days
- e 30 hours = days and hours
- f 150 minutes = hours and minutes

2 Find the result of each of the following:

a

Hours	Minutes
6	: 34
+ 2	: 26
.....	:

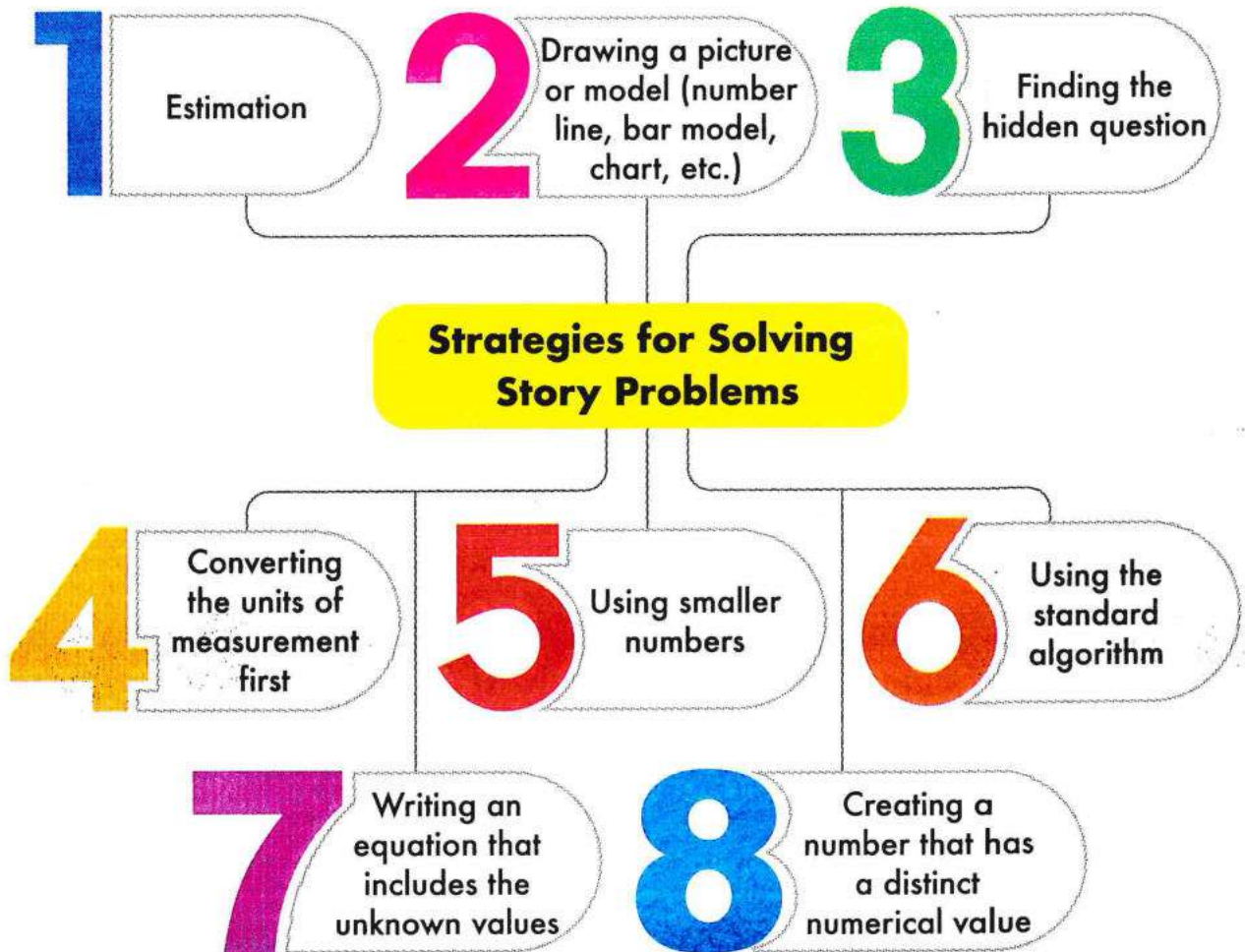
b

Hours	Minutes
5	: 05
- 3	: 35
.....	:

3 A movie started at 6:20 p.m., and ended at 8:30. How long is the movie?

6&7 Lessons

Applications of Measurements 1&2



Practice 1

Aya bought potatoes weighing **2 kg and 950 g**. She bought onions that weighed **1,075 grams less than** the potatoes. What is the weight of the potatoes and onions **together**?

Practice 2 It takes **45 days** for a pharaoh ant to grow from the egg stage to become an adult ant. It takes **12 weeks** for a wood ant to grow from the egg stage to become an adult. Which species takes **the longer time** to grow from the egg stage to an adult ant? What is the **time difference** between them?

Practice 3 A fish tank has a capacity of **100 liters**. **20,000 milliliters** of water are poured into it. How many liters of water should be used to fill the tank completely?

Practice 4 Zina bought **8 kilograms** of sugar, **10 kilograms** of flour, **500 grams** of cocoa, **225 grams** of nuts, and **275 grams** of coconut. What is the **total mass** of what Zina bought in **kilograms**?

Practice 5 Ahmed has a **12-meter-long** piece of wood. He wants to cut it into **3 equal pieces in length**. How long should each piece be in **meters**? What is the length of each piece in **centimeters**?

Practice 6 Ayman likes jogging. During training, Ayman needs to drink **500 milliliters** of water **4 times per day**. How many **liters** of water will he drink in **one week**?

Practice 7 Ehab trains weightlifting. His weight is **100 kilograms**. Ehab wants his weight to **increase by 500 grams per week**. If this continues for **5 weeks**, what will his weight be at the end?

Unit 4

Area and Perimeter

Concept 4.1

Explore Area and Perimeter

Lesson 1 Finding Perimeter

Learning Objectives:

By the end of this lesson, the student will be able to:

- Define perimeter.
- Use formulas to calculate the perimeter of rectangles.
- Explain how to calculate perimeter.



Lesson 2 Finding Area

Learning Objectives:

By the end of this lesson, the student will be able to:

- Define area.
- Use formulas to calculate the area of rectangles.
- Explain how to calculate area.



Lesson 3 Unknown Dimensions

Learning Objective:

By the end of this lesson, the student will be able to:

- Use formulas to calculate unknowns when given some dimensions of rectangles.



Lesson 4 Complex Shapes

Learning Objectives:

By the end of this lesson, the student will be able to:

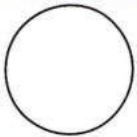
- Find the area and perimeter of complex shapes.
- Explain his/her strategies for finding the area and perimeter of complex shapes.

1 Lesson

Finding Perimeter

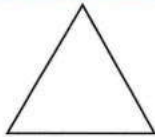
Remember

0 Sides



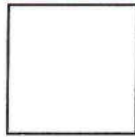
Circle

3 Sides



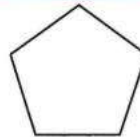
Triangle

4 Sides



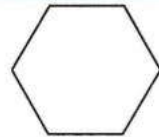
Quadrilateral

5 Sides

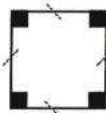


Pentagon

6 Sides



Hexagon



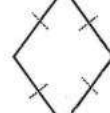
Square



Rectangle



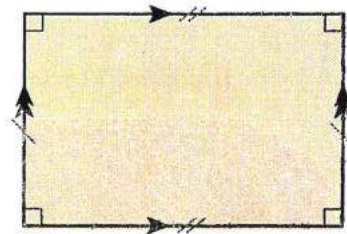
Trapezoid



Rhombus

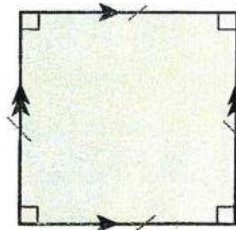
Rectangle

- It is a **quadrilateral** with **four sides** and **four angles**.
- Each two opposite sides are **equal** and **parallel**.
- Each of its corners (angles) is a **right angle** (90 degrees).



Square

- It is a type of **rectangles**.
- Its four sides are **equal**.

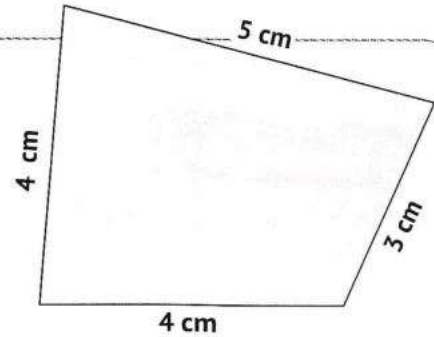


Perimeter	المحيط	Area	المساحة	Dimensions	الأبعاد	Angle	زاوية
-----------	--------	------	---------	------------	---------	-------	-------

Perimeter

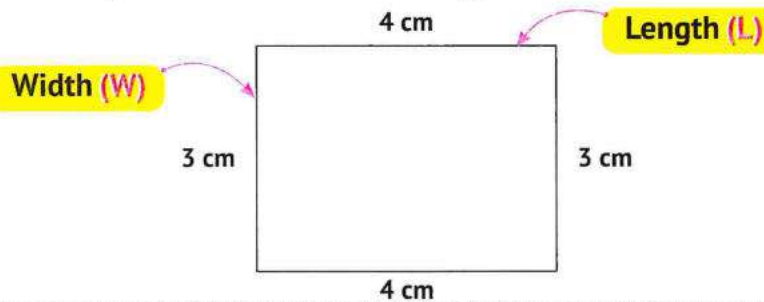
- The **perimeter** of a figure is the **sum of the lengths of its sides**.

Example: The perimeter of the opposite figure
 $= 5 + 3 + 4 + 4 = 16 \text{ cm}$.



Perimeter of the Rectangle

- We can calculate the perimeter of the rectangle in one of the ways shown below.



First Formula

Perimeter of the rectangle
 $= \text{Length} + \text{Width} + \text{Length} + \text{Width}$
 $= 4 + 3 + 4 + 3$
 $= 14 \text{ cm}$

$$P = L + W + L + W$$

Second Formula

Perimeter of the rectangle
 $= (\text{Length} \times 2) + (\text{Width} \times 2)$
 $= (4 \times 2) + (3 \times 2)$
 $= 8 + 6 = 14 \text{ cm}$

$$P = L \times 2 + W \times 2$$

Third Formula

Perimeter of the rectangle
 $= (\text{Length} + \text{Width}) \times 2$
 $= (4 + 3) \times 2$
 $= 7 \times 2 = 14 \text{ cm}$

$$P = (L + W) \times 2$$

Perimeter of the Square

- We can calculate the perimeter of the square in one of the ways shown below.

First Formula

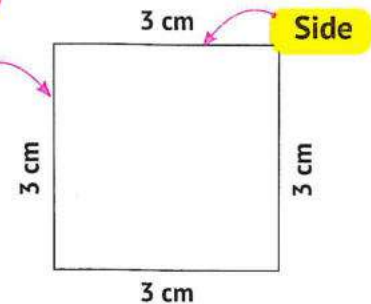
Perimeter of the square
 $= \text{The sum of its sides lengths}$
 $= 3 + 3 + 3 + 3 = 12 \text{ cm}$

$$P = S + S + S + S$$

Second Formula

Perimeter of the square
 $= \text{Side length (S)} \times 4$
 $= 3 \times 4 = 12 \text{ cm}$

$$P = S \times 4$$



Formula	قانون/قاعدة	Length (L)	طول	Width (W)	عرض	Side (S)	ضلع
---------	-------------	------------	-----	-----------	-----	----------	-----

Practice 1 Use **two different formulas** to find the **perimeter** of each shape. Show your steps:

a First Formula =

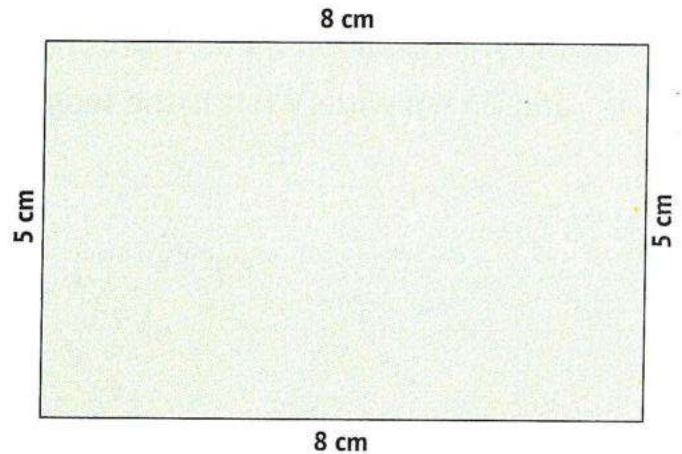
.....

.....

Second Formula =

.....

.....



b First Formula =

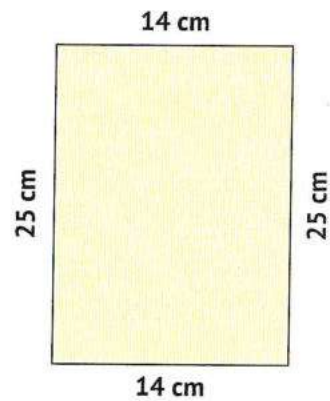
.....

.....

Second Formula =

.....

.....



c First Formula =

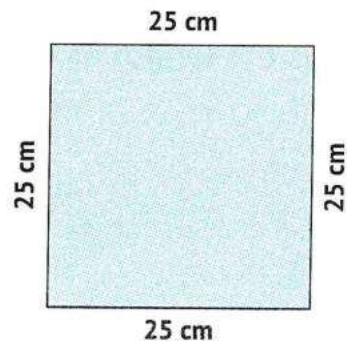
.....

.....

Second Formula =

.....

.....



Practice 2

Solve the following **perimeter** problems. For each problem, **draw** a rectangle and write the **length** and **width** according to the problem:

- a Tarek is making a frame for his rectangular picture. The frame is **45 cm** long and **25 cm** wide. What is the **length (perimeter)** of the frame?

.....

.....

.....

.....

.....

- b Omar is building a square fence around his garden. Each side is **8 meters** long. What is the **length** of the fence?

.....

.....

.....

.....

.....

- c Essam wants to put a wooden frame around a **2 m** long and **1 m** wide window. What is the **length** of the frame?

.....

.....

.....

.....

.....

Example: Find the **length** and **width** of a rectangle with a perimeter of 12 cm.

$$L + W = \left(\frac{1}{2} \text{ Perimeter}\right) 12 \div 2 = 6 \text{ cm.}$$

6 can be divided into parts in one of the following ways:

$$6 = 5 + 1$$

So, Length = 5 and width = 1 cm

$$6 = 4 + 2$$

So, Length = 4 and width = 2 cm

$$6 = 3 + 3$$

So, Length = 3 and width = 3 cm (Square)

Practice 3

Maha walked in a path with a perimeter of 200 m. Draw **two different** rectangles that can represent her path. Write the **length** and **width** on the drawing.

First Rectangle

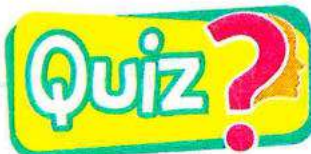
Second Rectangle

Practice 4

Find the **perimeter** of a square whose sides are 20 cm long. Then draw a **rectangle** with the **same perimeter**.

Practice 5 Complete the following:

- a The perimeter of the square = X
- b The perimeter of the rectangle = (..... +) X
- c If a square has a 7 m side length, then its perimeter is
- d If a rectangle has 8 cm length and 6 cm width, then its perimeter is
- e If the dimensions of a rectangle are 50 m and 30 m, then its perimeter is



10

1 Complete the following:

- a If a rectangle is 12 m long and 10 m wide, then its perimeter is m.
- b If a square has a side length of 8 cm, then its perimeter is cm.
- c The perimeter of the rectangle = x 2 + x 2.

2 Choose the correct answer:

- a If the perimeter of a rectangle is 12 cm, then its dimensions are
(4 cm, 3 cm or 4 cm, 2 cm or 6 cm, 2 cm or 8 cm, 4cm)
- b The perimeter of the rectangle:
($P = L \times W$ or $P = L \times W \times L \times W$ or $P = L + W + L + W$ or $P = L \times W \times 2$)
- c If a square has a side length of 6 cm, then its perimeter is cm.
(24 or 36 or 18 or 22)

3 A square has a side length of 6 cm. Find its perimeter.
Then draw a rectangle with the same perimeter.

2

Lesson

Finding Area

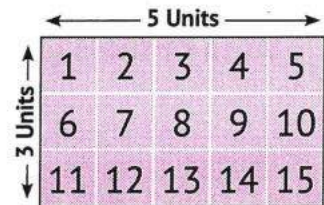
Area

A shape area is the surface area of **two-dimensional geometric shapes**.

Or it is the **number of square units** that make up a shape.

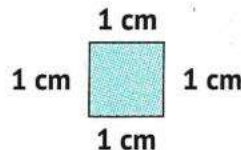
Example: The area of the following figure:

- The units that make up the following figure are **15** square units.
- The area can also be calculated in another way:
 - We have 3 rows and each row consists of 5 units.
 - Therefore, the area (number of units)
 $= 5 \times 3 = 15$ square units.



Units of Area Measurement:

- Any unit of length (**millimeter, centimeter, meter, kilometer**) can be used. However, we always say the word **square** or write **the power of 2** to represent the amount of squares for a given unit which can be plotted in a grid on the figure.
- **Square centimeter (cm²)**: is the area of a square with a side length of **1 cm**.



- **Square meter (m²)**: is the area of a square with a side length of **1 m**.

Area of the Rectangle:

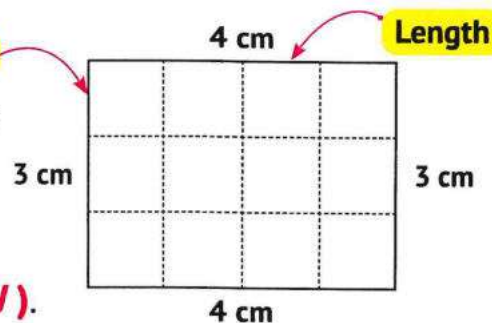
- To calculate the area of the opposite rectangle:

$$\text{Area} = 4 \times 3 = 12 \text{ cm}^2.$$

Formula:

- Area of the rectangle = Length (L) x Width (W).

$$A = L \times W$$



Area of the Square:

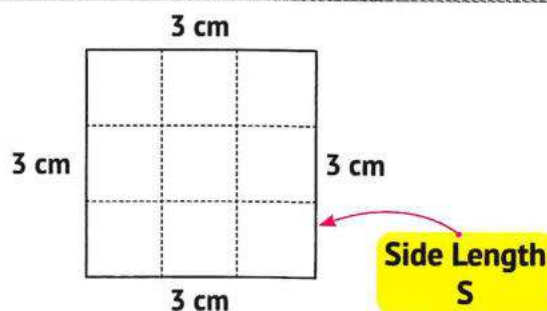
- To calculate the area of the opposite square:

$$\text{Area} = 3 \times 3 = 9 \text{ cm}^2.$$

$$A = (S) \times (S)$$

- Area of the square = the length of the side (S) x itself (S)

$$A = S \times S$$



Practice 1 Calculate the area of the following shapes. Show your steps:

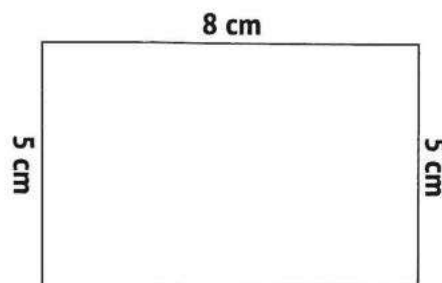
a) Area =

.....

.....

.....

.....



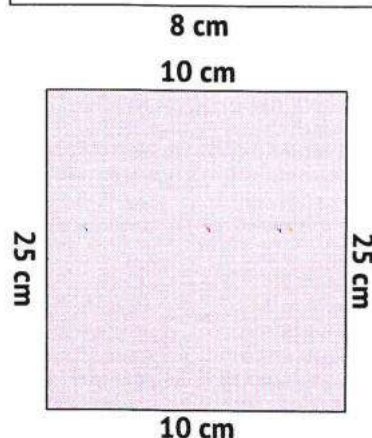
b) Area =

.....

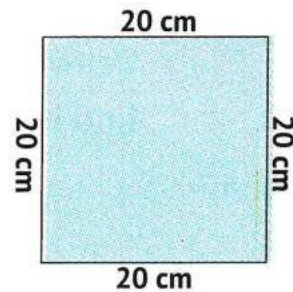
.....

.....

.....



c Area =



Practice 2 A dining table is **8 m** long and **6 m** wide. What is the **area** of the glass needed to cover the top of this table?

Area =

Practice 3 A square piece of paper has a side length of **9 cm**. What is the **area** of this piece of paper?

Area =

Practice 4 A glass window is surrounded by a wooden frame made up of two rectangular parts, each measuring **6 m** in length and **2 m** in width. The two parts are joined along their shorter edges. Find the **area** of the glass and the **perimeter** of the wooden frame.

Practice 5 Draw **two different rectangles** with an area of **24 cm²**, then find the **perimeter** of each.

Perimeter =

Perimeter =

Practice 6 Draw a rectangle of 5 cm length and 2 cm width, then find its perimeter and area.

Perimeter =

Area =

Practice 7 A rectangle has an area of 30 square meters. (There are more than one answer.) What is the perimeter of this rectangle? Draw your answer with the dimensions.

Perimeter =

Practice 8 Choose the correct answer:

a The area of the square:

($A = S \times S$ or $A = S + S$ or $A = S \times 4$ or $A = S \times 2$)

b The area of the rectangle:

($A = L + W$ or $A = L \times W$ or $A = 2 \times (L + W)$ or $A = L - W$)

c If the dimensions of a rectangle are 20 cm and 8 cm, then its area is

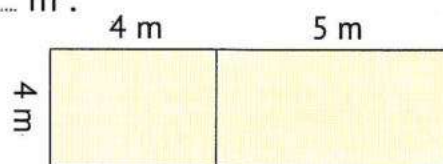
..... cm^2 . (28 or 82 or 160 or 100)

d The area of a square with a side length of 8 mm is mm^2 .

(88 or 32 or 16 or 64)

e The area of the following shape is m^2 .

(36 or 13 or 80 or 54)



Quiz?

10

1 Complete the following:

- a A rectangle of 7 cm length and 4 cm width has an area of sq cm.
- b A square with a side length of 6 cm has an area of sq cm.
- c The area of the rectangle = x

2 Choose the correct answer:

- a If the area of a rectangle is 12 sq cm, then its dimensions are
(4 cm, 3 cm or 4 cm, 2 cm or 10 cm, 2 cm or 8 cm, 4 cm)
- b The area of the square:
($A = S \times 4$ or $A = S \times S$ or $A = S + S$ or $A = S + 4$)
- c If a square has a side length of 8 cm, then its area is sq cm.
(32 or 16 or 64 or 80)

3 Find the area of a rectangle with a length of 8 cm and a width of 2 cm. Then draw a square with the same area.

.....

.....

.....

.....

في
اللغة
العربية
للمف الرابع الابتدائي

أحرص
على اقتناء كتاب
الأستاذ

3

Lesson

Unknown Dimensions

• Rectangle

- If we have the **perimeter** or **area** of a rectangle and **one** of **its dimensions** (length or width), we can get the other dimension as shown in the following figure.

Length

L

$$\text{Length} = (\text{Perimeter} \div 2) - \text{Width}$$

$$L = (P \div 2) - W$$

Width

W

$$\text{Width} = (\text{Perimeter} \div 2) - \text{Length}$$

$$W = (P \div 2) - L$$

Example: The perimeter of a rectangle is **20 cm**, and its width is **3 cm**.
Find its **length** and **area**.

Answer: $P \div 2 = 20 \div 2 = 10 \text{ cm}$, $L = 10 - 3 = 7 \text{ cm}$

$$A = L \times W = 7 \times 3 = 21 \text{ cm}^2$$

- If we have the **area** of a rectangle and **one** of **its dimensions** (length or width), we can get the other dimension as shown in the following figure.

$$\text{Length} = \text{Area} \div \text{Width}$$

Area (A)

$$\text{Width} = \text{Area} \div \text{Length}$$

Length $\times$ Width

Example: The area of a rectangle is **32 cm²**, and its length is **8 cm**.
Find its **width** and **perimeter**.

Answer: $W = A \div L = 32 \div 8 = 4 \text{ cm}$.

$$\begin{aligned} P &= 2L + 2W = 2 \times 8 + 2 \times 4 \\ &= 16 + 8 = 24 \text{ cm.} \end{aligned}$$

Square

- If we have the **perimeter** of a square, we can get the **length** of the side by dividing the **perimeter by 4**.

Side Length Perimeter

P

Side length = Perimeter $\div$ 4

$$S = P \div 4$$

Side Length Area

A

Side length $\times$ Side length = Area

$$S \times S = A$$

Example: A square has a perimeter of **24 cm**. Find its **side length** and **area**.

Answer: $S = P \div 4 = 24 \div 4 = 6 \text{ cm}$. $A = S \times S = 6 \times 6 = 36 \text{ cm}^2$.

- If we have the **area** of a square, then we can get the **length** of the side by looking for **two identical numbers whose product is equal to the area**.

Example: A square has an area of **25 cm²**. Find its **side length** and **perimeter**.

Answer: $25 = 5 \times 5$

So, the side length = 5 cm.

$P = S \times 4 = 5 \times 4 = 20 \text{ cm}$.

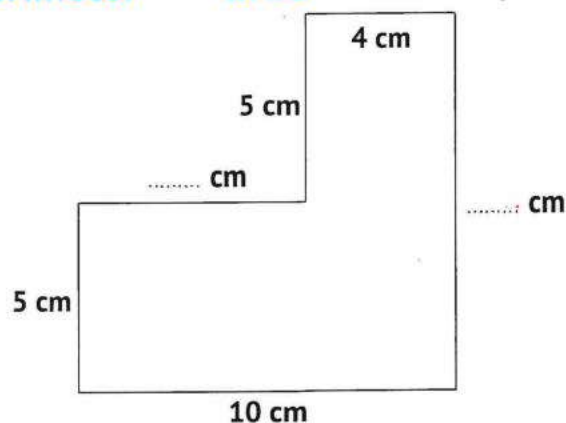
Practice 1 Complete the following table:

	Length of the Rectangle	Width of the Rectangle	Perimeter (L + W) $\times$ 2	Area (L $\times$ W)
a	10 cm	7 cm	.....	.....
b	.....	6 m	30 m	.....
c	12 mm	.....	40 mm	.....
d	.....	4 cm	.....	36 cm ²
e	8 dm	.....	.....	48 dm ²

Practice 2 Complete the following table:

	Side Length of the Square	Perimeter ($S \times 4$)	Area ($S \times S$)
a	6 cm		
b		28 m	
c			64 mm ²

Practice 3 Find the **lengths** of the **unknown sides** in the following figure. Then, find the **perimeter** and **area** of the shape.



Practice 4 Adam wants to make a frame for his father's photo. The photo is in the form of rectangle with an area of **100 cm²**. Find the **length** and **width** of the frame. (There are more than one answer.)

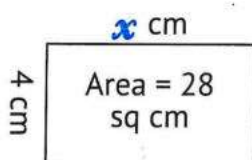
Practice 5 Ismail needs **120 meters** of wire to build a fence around his farm. If the length of one of the sides of the farm is **30 m**, what is the **length** of the other side? Draw a figure showing the farm.

Quiz?

10

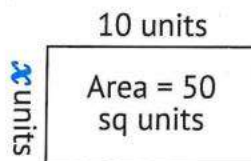
1 Find the **unknown side lengths** based on the given **areas**:

a



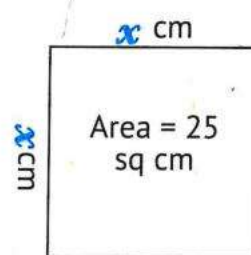
.....
.....

b



.....
.....

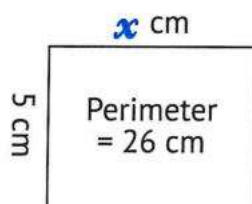
c



.....
.....

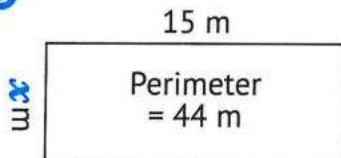
2 Find the **unknown side lengths** based on the given **perimeters**:

a



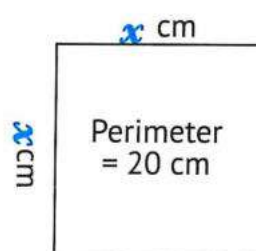
.....
.....

b



.....
.....

c



.....
.....

3 Hussam used **60 cm** of tape to make a frame for a rectangular picture. If the length of the picture is **20 cm**, what is the **area** of the picture?

.....
.....
.....

4

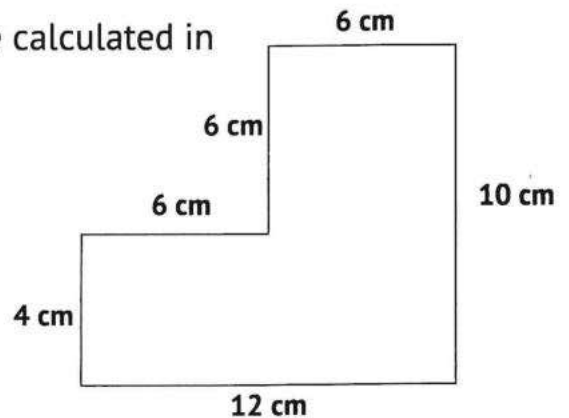
Lesson

Complex Shapes

- The area and perimeter of odd shapes can be calculated in several ways, as in the following examples:

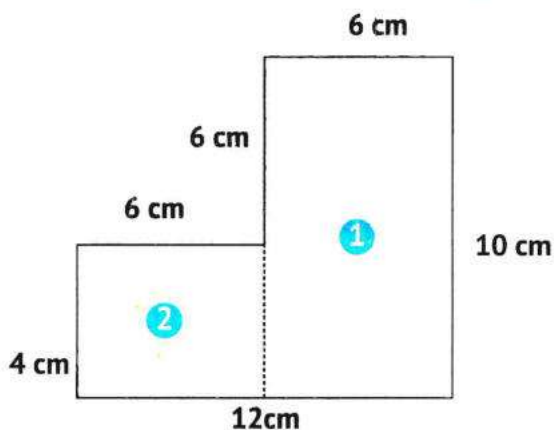
Example:

Calculate the area and perimeter of the opposite shape.



First Strategy

Divide the shape into rectangles.



$$\text{Perimeter} = 12 + 10 + 6 + 6 + 6 + 4 = 44 \text{ cm.}$$

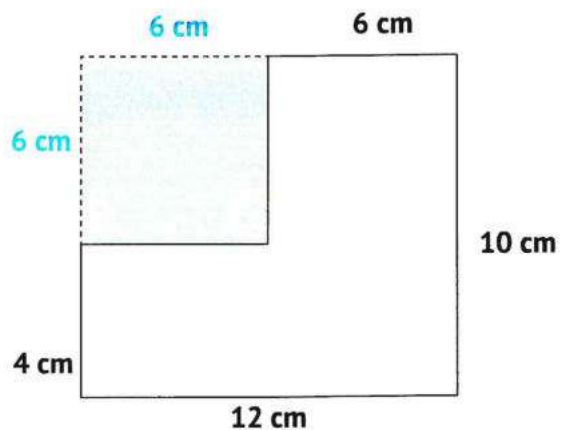
$$\text{Area of rectangle (1)} = 10 \times 6 = 60 \text{ cm}^2.$$

$$\text{Area of rectangle (2)} = 6 \times 4 = 24 \text{ cm}^2.$$

$$\begin{aligned} \text{Area of the shape} &= 60 + 24 \\ &= 84 \text{ cm}^2. \end{aligned}$$

Second Strategy

Complete the shape.



$$\text{Perimeter} = 12 + 10 + 6 + 6 + 6 + 4 = 44 \text{ cm.}$$

$$\begin{aligned} \text{Area of the whole rectangle} &= 12 \times 10 \\ &= 120 \text{ cm}^2. \end{aligned}$$

$$\text{Area of the added part} = 6 \times 6 = 36 \text{ cm}^2.$$

$$\text{Area of the shape} = 120 - 36 = 84 \text{ cm}^2.$$

Complex shapes

أشكال مُركبة

Several ways

طرق متعددة

Practice 1 Calculate the **perimeter** and **area** of the following shape.

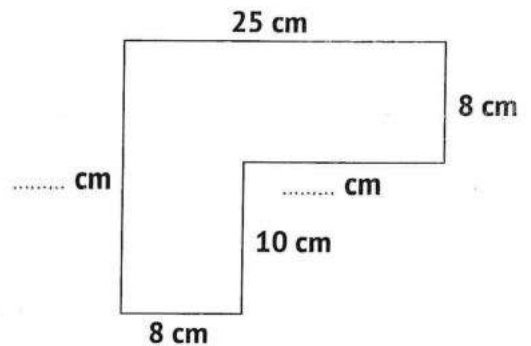
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Practice 2 Calculate the **perimeter** and **area** of the following shape.

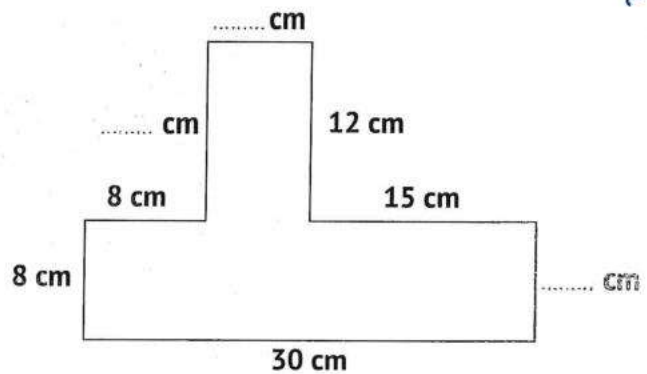
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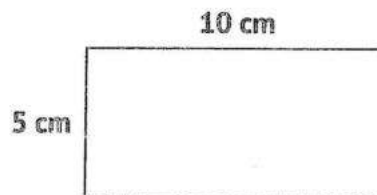
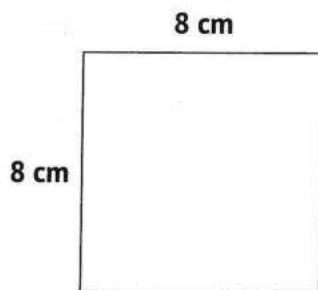
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Practice 3 Combine the following two geometric shapes to form one complex shape. Calculate the **area** and **perimeter** of this shape. Draw your **geometric figure** and write the **measurements** of the sides.



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Quiz?

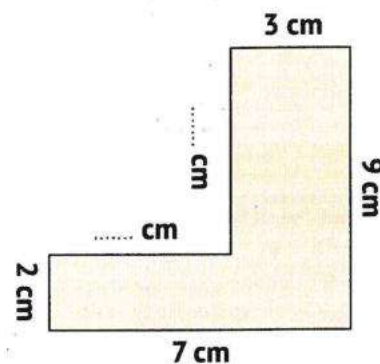
10

- 1 Find the **missing side**, then calculate the **area** of the complex shape.

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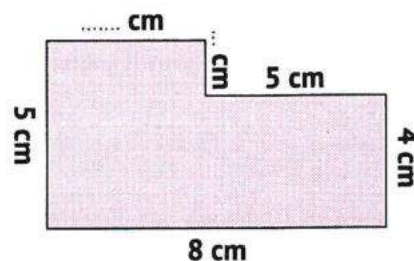


- 2 Find the **missing side**, then calculate the **area** of the complex shape.

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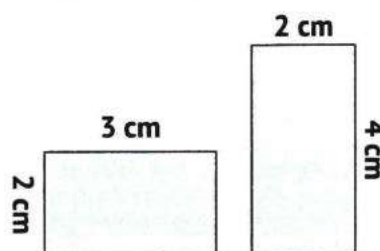


- 3 Combine these two simple shapes to form a **complex shape**. Then, calculate the **perimeter** and **area**.

.....

.....

.....



Theme

2

Mathematical Operations and Algebraic Thinking

Theme Units 

Unit

5

Multiplication as a Relationship

Concept 5.1: Multiplicative Comparisons

Concept 5.2: Properties and Patterns of
Multiplication

Unit

6

Factors and Multiples

Concept 6.1: Understanding Factors

Concept 6.2: Understanding
Multiples

Unit

7

Multiplication and Division: Computation and Relationships

Concept 7.1: Multiplying by 1-Digit
and 2-Digit Numbers

Concept 7.2: Dividing by 1-Digit
Divisors

Unit

8

Order of Operations

Concept 8.1: Order of
Operations

Unit

5

Multiplication as a Relationship

Concept 5.1

Multiplicative Comparisons

Lessons

1-3

Multiplicative Comparison

Creating Multiplicative Comparison Equations

Solving Multiplicative Comparison Equations

Learning Objectives:

By the end of these lessons, the student will be able to:

- Define multiplicative comparison.
- Explain how multiplication can be used to compare numbers.
- Create models to show multiplicative comparisons.
- Create multiplication equations to represent comparisons.
- Use a letter to represent a missing number in a multiplication problem.
- Solve a multiplication equation that represents a comparison.



1-3 Lessons

Multiplicative Comparison Creating Multiplicative Comparison Equations Solving Multiplicative Comparison Equations

$4 \times 6 = 24$, 24 can be decomposed as:



So, **24** is 4 times greater than **6** or **24** is 6 times greater than **4**

- Example:** a Compare 18 and 6 $\Rightarrow$ 18 is **three** times greater than 6.
b Compare 18 and 3 $\Rightarrow$ 18 is **six** times greater than 3.

Tape Diagram



In the previous tape diagram, we find that "6" is repeated 5 times.

$6 + 6 + 6 + 6 + 6 = 30$ i.e. $6 \times 5 = 30$

And we can say that 30 is 5 times greater than 6.

Equation

It is a **mathematical formula** in which **numbers** and **symbols** are used to express the **equality relationship** in a numerical sentence.

The **unknown number** is expressed by one of the letters (**x, y, z, a, b, ...**) and it is called a **"variable"**.

Examples: $x + 2 = 5$, $3x = 9$, $2x + 3 = 13$

Comparison	مقارنة	Tape diagram	مخطط شريطي	Equation	معادلة
Solving equation	حل المعادلة	Symbols	رموز	Variable	متغير
Numerical sentence	صيغة عددية	Mathematical formula	صيغة رياضية		

▶ Converting a numerical sentence into an equation

Example:

3 times greater than 7 is
 $3 \times 7 = \dots$

Example:

..... is 5 times greater than 9.
 $y = 5 \times 9$

Example:

24 is 4 times as many as
 $24 = 4 \times y$

Example:

27 is times as many as 3.
 $27 = m \times 3$

Practice 1 Write **equations** for the following comparisons. Use a **symbol (letter)** to represent the **unknown number**:

- a is 4 times greater than 7. $\Rightarrow$ Equation:
- b is 4 times greater than 3. $\Rightarrow$ Equation:
- c is 2 times greater than 7. $\Rightarrow$ Equation:
- d is 6 times as many as 3. $\Rightarrow$ Equation:
- e 24 is 3 times as many as $\Rightarrow$ Equation:
- f 48 is 8 times greater than $\Rightarrow$ Equation:
- g 21 is times greater than 3. $\Rightarrow$ Equation:
- h 36 is times as many as 9. $\Rightarrow$ Equation:

Example:

Ahmed has 15 balls. This is equal to 5 times greater than the number of balls that his brother Adel has. Write an equation to represent this comparison.

Solution: The number of balls that Ahmed has is 5 times greater than the number of balls that Adel has.

Equation: $15 = 5 \times x$

Practice 2

Read the story problems and think about the comparisons. Then write the **multiplication equation** that represents each problem.

Use a **letter** to represent the **unknown number**. It is **not necessary** to solve the equations.

- a Nadia collected **5** glass balls in **March**, and she continued to collect balls until **May**. By **May**, she had **4 times** more than the number of glass balls she had collected in **March**. How many glass balls did she have in **May**?

.....

.....

- b Hamed had **12** pieces of cake. This is equal to **3 times** greater than the number of cakes that his brother Ahmed had. How many pieces of cake did Ahmed have?

.....

.....

- c Aida walked to school on **Monday** and arrived in **21 minutes**. On **Tuesday**, she rode her bike to school and arrived in **7 minutes**. How many more times was riding her bike faster than walking?

.....

.....

- d Sarah ran around the football field **4 times**. Aya ran around the football field **twice** as many times as Sarah. How many times did Aya run around the football field?

.....

.....

- e Rana has **6 mangoes**. Her brother Sherif has **18 mangoes**. How many times is the number of mangoes with Sherif the same as the number of mangoes with Rana?

.....

.....

Solve the equation = Find the value of the unknown (variable)

Example: Write a comparison equation, use letters to represent the unknown, then find the value of the unknown.

a What number is 3 times greater than 8?

Equation: $x = 3 \times 8$

Solution: $x = 24$

b 28 is 4 times more than which number?

Equation: $28 = 4 \times y$

Solution: $y = 28 \div 4 = 7$

Practice 3 Write a comparison equation, use symbols (letters) to represent the unknown. Then find the value:

a What number is 8 times greater than 4?

Equation: Solution:

b What number is 6 times more than 5?

Equation: Solution:

c What number is 9 times as many as 2?

Equation: Solution:

d 18 is 6 times greater than what number?

Equation: Solution:

e 36 is 4 times more than what number?

Equation: Solution:

- f 42 is 7 times as many as what number?

Equation:

Solution:

Practice 4

Read the story problems and think about the comparisons. Then write the **multiplication equation** that represents each problem.

Use a **letter** to represent the **unknown number**. Then solve the equation:

- a Rana has **15 candy bars**. This is **3 times** more than the number of candy bars her brother Karim has. How many candy bars does Karim have?

Equation:

Solution:

- b Alaa ran around the football field **5 times**. Aya ran around the field **3 times** as many times as Alaa.

How many times did Aya run around the field?

Equation:

Solution:

- c Saleh has **5 oranges**. His brother, Adel, has **20 oranges**.

How many times is the number of oranges with Adel the same as the number of oranges with Saleh?

Equation:

Solution:

- d The height of a building is **24 meters**. A tree is **3 meters** high.

How many times is the height of the building the same as the height of the tree?

Equation:

Solution:



1 Complete the following:

- a 45 is times the number 5.
- b The multiplication equation of $6 + 6 + 6 = 18$ is $\times$ =
- c is 4 times the number 7.

2 Choose the correct answer:

- a If $3x = 9$, then $x =$ (3 or 27 or 12 or 6)
- b If $63 = 7 \times m$, then 63 is times more than m .
(63 or 9 or 7 or 2)
- c The equation for the comparison: 15 is a times greater than 3
is
($a \times 3 = 15$ or $15 \times a = 3$ or $15 \times 3 = a$ or $a + 3 = 15$)

3 If the price of one pen is 3 pounds, then what is the price of 7 pens? (Write the multiplication equation that represents the previous question.)



Unit 5

Multiplication as a Relationship

Concept 5.2

Properties and Patterns of Multiplication

Lessons



4&5 Commutative Property of Multiplication Identity Property and the Zero Property

Learning Objectives:

By the end of these lessons, the student will be able to:

- Explain the Commutative Property of Multiplication.
- Apply the Commutative Property of Multiplication to solve problems with and without an unknown number.
- Explain the Identity Property and the Zero Property of Multiplication.
- Apply the Identity Property and the Zero Property of Multiplication to solve problems.
- Identify patterns he/she observes when multiplying by 10, 100, and 1,000.

Lessons



6&7 Associative Property of Multiplication Applying Patterns in Multiplication

Learning Objectives:

By the end of these lessons, the student will be able to:

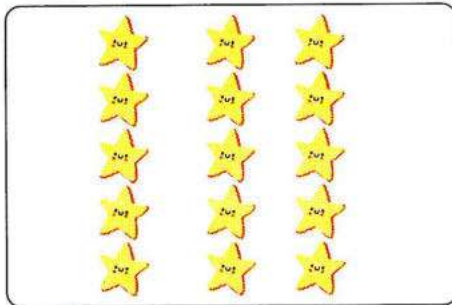
- Explain the Associative Property of Multiplication.
- Apply the Associative Property of Multiplication to solve problems.
- Use decomposing and the Associative Property of Multiplication to solve equations with multiples of 10, 100, or 1,000.

4&5 Lessons

Commutative Property of Multiplication Identity Property and the Zero Property

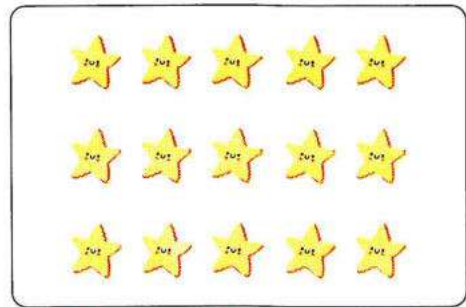
Arrays and the Commutative Property

► Note the following arrays:



5 rows of 3 stars each

$$5 \times 3 = 15$$



3 rows of 5 stars each

$$3 \times 5 = 15$$

$$\text{So, } 5 \times 3 = 3 \times 5$$

► In the following array:

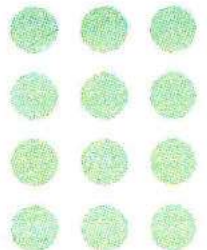
4 rows, 3 circles in each row:

$$4 \times 3 = 12$$

3 columns, 4 circles in each column:

$$3 \times 4 = 12$$

$$\text{So, } 4 \times 3 = 3 \times 4$$



► From the previous, we find that:

$$5 \times 3 = 3 \times 5, \quad 4 \times 3 = 3 \times 4$$

The product of multiplication is **not affected** by changing the **places** of the factors in the multiplication process (**Commutative Property**).

Practice 1 Complete the following:

a $5 \times \dots = 7 \times 5$

b $\dots \times 3 = 3 \times 6$

c $8 \times 6 = \dots \times 8$

d $9 \times 3 = 3 \times \dots$

Commutative Property

خاصية الإبدال

Identity Property

خاصية المحايد

Practice 2 Use the **Commutative Property of Multiplication** to find the unknown value:

- a If $5 \times x = 8 \times 5$, then $x = \dots\dots\dots$. b If $y \times 4 = 4 \times 10$, then $y = \dots\dots\dots$.
 c If $6 \times 3 = 3 \times m$, then $m = \dots\dots\dots$. d If $4 \times 8 = a \times 4$, then $a = \dots\dots\dots$.

Practice 3 Saleh has 30 eggs. Write an equation using the **Commutative Property of Multiplication** to describe two ways in which he can arrange the eggs.

Practice 4 Lamia has 40 books. Write an equation using the **Commutative Property of Multiplication** to describe two ways in which she can arrange the books.

Identity Property of Multiplication

The Identity Element Property of Multiplication is 1.

Note that: $8 \times 1 = 8$, $1 \times 8 = 8$

$$\text{So, } 8 \times 1 = 1 \times 8 = 8$$

The product of any number multiplied by "1" is the same number.

Zero Property of Multiplication (Multiplying by Zero):

Note that: $8 \times 0 = 0$, $0 \times 8 = 0$

$$\text{So, } 8 \times 0 = 0 \times 8 = 0$$

The product of any number multiplied by zero is zero.

Multiplying by 10, 100, and 1,000, ...

$$\begin{array}{c} 6 \times 1 \\ 6 \times 10 = 60 \end{array} , \quad \begin{array}{c} 6 \times 1 \\ 6 \times 100 = 600 \end{array} , \quad \begin{array}{c} 6 \times 1 \\ 6 \times 1,000 = 6,000 \end{array}$$

- When multiplying by **10, 100, 1,000, ...**, take out the **zeros** on the **right** and then complete the multiplication.

Practice 5 Complete the following:

- a $5 \times \dots = 0$ b $\dots \times 7 = 0$ c $\dots \times 6 = 6$
 d $\dots \times 1 = 9$ e $1 \times \dots = 7$ f $3 \times \dots = 3$

Practice 6 Find the product of:

- a $8 \times 10 = \dots$ b $9 \times 100 = \dots$ c $1,000 \times 6 = \dots$
 d $12 \times 10 = \dots$ e $20 \times 100 = \dots$ f $30 \times 1,000 = \dots$

Practice 7 Complete the following:

- a $4 \times \dots = 40$ b $8 \times \dots = 8,000$ c $6 \times \dots = 600$
 d $10 \times \dots = 1,000$ e $\dots \times 20 = 200$ f $10 \times \dots = 100$

Quiz?

10

1 Complete the following:

- a $5 \times \dots = 7 \times 5$ b $1,000 \times 2 = \dots$
 c $16 \times 0 = \dots$ d $200 \times \dots = 20,000$

2 Choose the correct answer:

- a If $a \times 12 = 12 \times 5$, then $a = \dots$ (12 or 5 or 60 or 7)
 b $80 \times \dots = 80,000$ (10 or 100 or 1,000 or 10,000)
 c If $m \times 62 = 62$, then $m = \dots$ (0 or 1 or 5 or 10)
 d $5 \times \dots = 0$ (0 or 1 or 5 or 10)

3 The price of one pen is 90 piasters. How much are 10 pens?

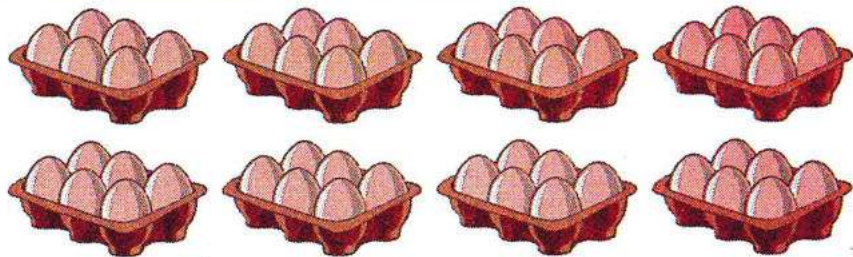
6 & 7 Lessons

Associative Property of Multiplication Applying Patterns in Multiplication

Associative Property of Multiplication

Example:

In the opposite picture:



Each plate
contains **6** eggs.

Each row contains
4 egg plates.

Two rows of egg
plates

To calculate the number of eggs = **6** x **4** x **2**

First Method:

- Number of plates: $4 \times 2 = 8$ egg plates.
- Total number of eggs: $8 \times 6 = 48$ eggs.

$$6 \times 4 \times 2 = 6 \times (4 \times 2) = 6 \times 8 = 48$$

Second Method:

- Number of eggs in each row: $6 \times 4 = 24$
- Total number of eggs: $24 \times 2 = 48$ eggs.

$$6 \times 4 \times 2 = (6 \times 4) \times 2 = 24 \times 2 = 48$$

$$\text{So, } 6 \times (4 \times 2) = (6 \times 4) \times 2$$

When multiplying more than two numbers, any two numbers can be multiplied first, and this **does not affect** the result (**Associative Property**).

Associative Property

خاصية الدمج

Practice 1 Find the product using the **Associative Property**:

a $5 \times 3 \times 2 = (\dots \times \dots) \times \dots = \dots \times \dots = \dots$

b $3 \times 4 \times 2 = (\dots \times \dots) \times \dots = \dots \times \dots = \dots$

c $2 \times 5 \times 4 = \dots \times (\dots \times \dots) = \dots \times \dots = \dots$

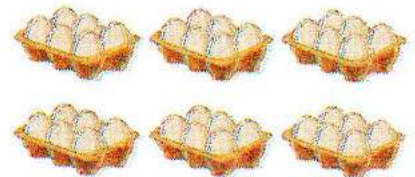
d $10 \times 6 \times 5 = \dots \times (\dots \times \dots) = \dots \times \dots = \dots$

Practice 2 Complete the following:

a $(5 \times \dots) \times 6 = \dots \times (3 \times 6)$ b $(\dots \times 6) \times 4 = 3 \times (6 \times \dots)$

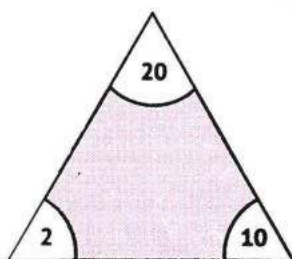
c $(9 \times 2) \times \dots = \dots \times (2 \times 7)$ d $(2 \times \dots) \times 8 = \dots \times (7 \times 8)$

Practice 3 Use the **Distributive Property of Multiplication** to count the number of eggs in the opposite picture.

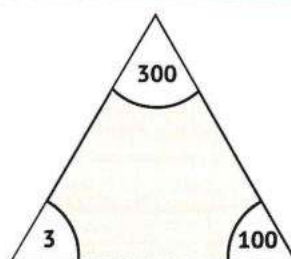


Practice 4 Emad bought **4 packs** of water bottles. Each pack contains **two rows** of bottles; each row has **5 bottles**. How many bottles of water did Emad buy?

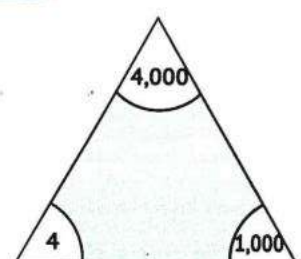
Decomposition of Multiples of 10



$20 = 2 \times 10$
 $20 = 2$ **Tens**



$300 = 3 \times 100$
 $300 = 3$ **Hundreds**



$4,000 = 4 \times 1,000$
 $4,000 = 4$ **Thousands**

Example: Use decomposing a number into its factors and the Associative Property of Multiplication to solve each of the following:

a 20×7

b 8×300

c $6 \times 5,000$

Solution:

a 20×7

$$\begin{aligned} &= (10 \times 2) \times 7 \\ &= 10 \times (2 \times 7) \\ &= 10 \times 14 \\ &= 140 \end{aligned}$$

b 8×300

$$\begin{aligned} &= 8 \times (3 \times 100) \\ &= (8 \times 3) \times 100 \\ &= 24 \times 100 \\ &= 2,400 \end{aligned}$$

c $6 \times 5,000$

$$\begin{aligned} &= 6 \times (5 \times 1,000) \\ &= (6 \times 5) \times 1,000 \\ &= 30 \times 1,000 \\ &= 30,000 \end{aligned}$$

Practice 5 Complete the following:

a $40 = \dots \times 4$

b $600 = \dots \times 6$

c $80 = \dots$ Tens

d $500 = \dots$ Hundreds

e $6,000 = \dots$ Hundreds

Practice 6 Use decomposing a number into its factors and the Associative Property of Multiplication to solve each of the following:

a $8 \times 30 = 8 \times (\dots \times \dots) = (8 \times \dots) \times \dots$
 $= \dots \times \dots = \dots$

b $6 \times 40 = 6 \times (\dots \times \dots) = (6 \times \dots) \times \dots$
 $= \dots \times \dots = \dots$

c $5 \times 800 = 5 \times (\dots \times \dots) = (\dots \times \dots) \times \dots$
 $= \dots \times \dots = \dots$

d $9 \times 700 = \dots$
 $\dots$
 $\dots$

e $5 \times 8,000 = \dots$
 $\dots$
 $\dots$

f $7 \times 6,000 = \dots$
 $\dots$
 $\dots$

Quiz?

10

1 Complete the following:

a $6 \times \dots \times 10 = (\dots \times 2) \times 10$

b $7 \times 50 = 35 \times \dots$

c $3 \times 4,000 = \dots$

d $9 \times \dots = (\dots \times 5) \times 100 = 45 \times 100$

2 Choose the correct answer:

a $7 \times (3 \times 5) = (\dots \times 3) \times 5$

(21 or 7 or 5 or 3)

b $6 \times 300 = 18 \times \dots$

(9 or 10 or 100 or 1,000)

c $8 \times 21 \square 8 \times 7 \times 2$

(< or = or >)

d 900 Thousands $\square$ 90 Millions

(< or = or >)

3 Use the **Associative Property of Multiplication** to calculate the number of flowers.

Unit

6

Factors and Multiples

Concept 6.1

Understanding Factors

Lessons

1&2

Identifying Factors of Whole Numbers Prime and Composite Numbers

Learning Objectives:

By the end of these lessons, the student will be able to:

- Define factors of a whole number.
- Identify factors of a whole number.
- Explain patterns he/she observes in numbers that have 2, 5, or 10 as factors.
- Identify factors of a whole number.
- Explain patterns he/she observes in numbers that have 3, 6, or 9 as factors.
- Determine if a number is prime or composite.

Lesson

3

Greatest Common Factor (GCF)

Learning Objectives:

By the end of this lesson, the student will be able to:

- Find common factors between two whole numbers.
- Identify the greatest common factor between two whole numbers.

1&2 Lessons

Identifying Factors of Whole Numbers Prime and Composite Numbers

Identifying Factors of Whole Numbers

$$\begin{array}{ccc} \boxed{3} & \times & \boxed{5} = \boxed{15} \\ \downarrow & & \downarrow \quad \downarrow \\ \text{Factor} & & \text{Factor} \quad \text{Product} \end{array}$$

- From the above, we find that "3" is one of the factors of 15 and "5" is one of the factors of 15.
- A **factor**: is a number that is multiplied by another number to get a product.

Example: Find all factors of 18.

Factors of 18 can be found in several ways:

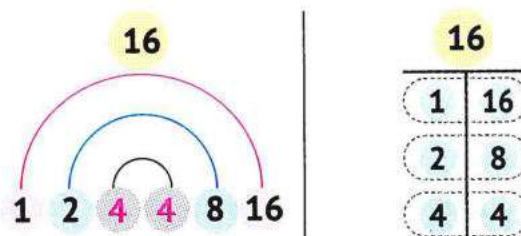
Factor Pairs أزواج العوامل	Factor Tree شجرة العوامل	Factor Rainbow قوس قزح	Factor T-chart مخطط العوامل						
1 x 18 2 x 9 3 x 6	18 1 2 3 6 9 18	18 1 2 3 6 9 18	18 <table><tr><td>1</td><td>18</td></tr><tr><td>2</td><td>9</td></tr><tr><td>3</td><td>6</td></tr></table>	1	18	2	9	3	6
1	18								
2	9								
3	6								

From above, we find that the factors of 18 are 1, 2, 3, 6, 9, and 18.

Example: Find all factors of 16.

The factors of 16 are:

1, 2, 4, 8, 16



Factor	عامل	Prime numbers	أعداد أولية	Composite numbers	أعداد غير أولية (مركبة)
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NOTES

- Factors are written **without** repetition.
- **1** is a common factor of **all numbers**.
- Any number has at least **two factors**, the number itself and one, except **1**, which has **only one factor**.
- "**Zero**" is not a factor of any number.

Practice 1

Find **all factors** of each number using a **factor rainbow** and a **factor T-chart**:

a **12**

The factors of 12 are:

.....

.....

12

b **40**

The factors of 40 are:

.....

.....

40

c **36**

The factors of 36 are:

.....

.....

36

Practice 2 Find **all factors** of each of the following numbers:

Use the method you prefer.

a 25
The factors of **25** are:**b** 48
The factors of **48** are:**c** 19
The factors of **19** are:**NOTES**

- To determine numbers with factors of **2, 5, or 10** using the **100 Chart**, we can count by jumping by **2, 5, or 10**.

91	92	93	94	95	96	97	98	99	100
81	82	83	84	85	86	87	88	89	90
71	72	73	74	75	76	77	78	79	80
61	62	63	64	65	66	67	68	69	70
51	52	53	54	55	56	57	58	59	60
41	42	43	44	45	46	47	48	49	50
31	32	33	34	35	36	37	38	39	40
21	22	23	24	25	26	27	28	29	30
11	12	13	14	15	16	17	18	19	20
1	2	3	4	5	6	7	8	9	10

- We find that:

Numbers with "2" as a factor

The numbers whose Ones digit is **0, 2, 4, 6, or 8** (even numbers).

Numbers with "5" as a factor

The numbers whose Ones digit is **0 or 5**.

Numbers with "10" as a factor

The numbers whose Ones digit is **0**.

Practice 3 From the **100 chart**, write **three** numbers whose factors are **2, 5, and 10**:

Practice 4 Circle the **factors** of the following numbers:

- a 15 (2 , 5 , 10) b 30 (2 , 5 , 10) c 12 (2 , 5 , 10)
d 25 (2 , 5 , 10) e 36 (2 , 5 , 10)

NOTES

Numbers with "3" as a factor:

- A number has **3** as a factor if the sum of its digits is a number you say when skip counting by **3s**.

Example: **72** has **3** as a factor.

Because: $7 + 2 = 9$, and **9** is a number we say when skip counting by **3s**.

Numbers with "6" as a factor:

- A number has **6** as a factor if:
 - It is an even number.
 - The sum of its digits is a number you say when skip counting by **3s**.

"It has both a factor of 2 and 3."

Example: **96** has **6** as a factor.

Because: ① 96 is an even number.

② $9 + 6 = 15$, and 15 is a number we say when skip counting by **3s**.

Numbers with "9" as a factor:

- A number has **9** as a factor if the sum of its digits is a number that we say when skip counting by **9s**. **The final sum of the digits is always 9.**

Example: **486** has **9** as a factor.

Because: $4 + 8 + 6 = 18$, and **18** is a number we say when skip counting by **9s**.

Practice 5 Complete the following table, as in the example:

Number	Factors				
	2	3	6	9	5
Example: 24	✓	✓	✓	✗	✗
a 15					
b 36					
c 10					
d 18					
e 40					
f 63					

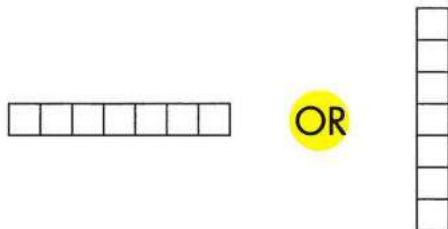
Prime and Composite Numbers**Prime Numbers**

A prime number is a whole number that has exactly **two different factors**, **1** and **itself**.

Example: 7 has only **two** different factors, **1** and **7**.

So, 7 is a prime number.

Only one rectangle of area: **7** square units can be created.

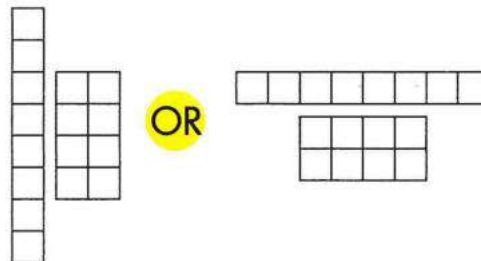
**Composite Numbers**

A composite number is a whole number that has **more than two factors**.

Example: 8 has **4** factors.
 $1 \times 8 = 8$, $2 \times 4 = 8$

So, 8 is a composite number.

Many rectangles of area: **8** square units can be created.



NOTES

- **1** is neither prime nor composite because it has only **one factor**.
- **2** is the **smallest** prime number.
- All prime numbers are **odd** numbers, except **2**, which is an **even** number.
- **3** is the **smallest odd** prime number.
- The prime numbers that lie between **1** and **100** are:

The prime numbers between			The prime numbers between		
0	2, 3, 5, 7	10	50	53, 59	60
10	11, 13, 17, 19	20	60	61, 67	70
20	23, 29	30	70	71, 73, 79	80
30	31, 37	40	80	83, 89	90
40	41, 43, 47	50	90	97	100

Practice 6 Write **all factors** of the following numbers. Then, write if the number is **prime** or **composite**:

Number	Factors	Number of Factors	Prime or Composite
a 14			
b 46			
c 22			
d 59			
e 50			
f 29			

Practice 7 Complete the following:

- a Find an **even** number between **20 and 30**. Some of its factors are **1, 2, 4, 7** and **14**.
The number is:
- b Find an **even** number greater than **40** and less than **60** that has **10** factors.
The number is:
- c Find a **two-digit** number that has **5** and **7** as factors. The digit in the Tens place is **less than** the digit in the Ones place.
The number is:

Quiz?

10

1 Complete the following:

- a The number that has only two factors is called
- b The prime numbers between 20 and 30 are
- c All prime numbers are numbers, except the number, which is an even number.

2 Choose the correct answer:

- a The smallest odd prime number is (1 or 2 or 3 or 5)
- b The number of factors of 16 is (3 or 4 or 5 or 6)
- c A number whose all factors are 1, 2, 4, 5, 10, and 20 is
(20 or 10 or 100 or 200)

3 Find **all** the **factors** of each number using a **factor T-chart** and a **factor rainbow**:

a Factors of 18 are:

.....
.....

b Factors of 20 are:

.....
.....

3

Lesson

Greatest Common Factor (GCF)

Common Factors Between Two Numbers

► To find the **common factor** between two numbers, we follow these steps:

- ① **Find** the factors of each number through one of the previous methods.
- ② **Rearrange** these factors from **the least to the greatest**.
- ③ **Determine** the **common factors** between the two numbers.

Example: Find the **common factors** of the numbers **18** and **24**:

18		24	
1	18	1	24
2	9	2	12
3	6	3	8
		4	6

- Factors of **18** are: **1**, **2**, **3**, **6**, **9**, **18**.
- Factors of **24** are: **1**, **2**, **3**, **4**, **6**, **8**, **12**, **24**.
- The common factors of **18** and **24** are: **1**, **2**, **3**, **6**.

Greatest Common Factor

(G C F)

- To find the **Greatest Common Factor** (GCF) of two numbers, follow the previous steps. Then, the **largest number** among their **common factors** is the **GCF**.

In the previous example:

- The common factors of **18** and **24** are: **1**, **2**, **3**, and **6**.
- The GCF of **18** and **24** is **6**.

NOTES

- 1 is the **common factor** of all whole numbers.
- All prime numbers have only one common factor, which is 1.

Practice 1

Find the **greatest common factor** of each of the following numbers:

a 12 and 16

Factors of 12 are:

.....

Factors of 16 are:

.....

The **common factors** are:

.....

The **greatest common factor** (GCF) is:

b 20 and 30

Factors of 20 are:

.....

Factors of 30 are:

.....

The **common factors** are:

.....

The **greatest common factor** (GCF) is:

© 21 and 35

Factors of 21 are:

.....

Factors of 35 are:

.....

The common factors are:

.....

The greatest common factor (GCF) is:

© 11 and 15

Factors of 11 are:

.....

Factors of 15 are:

.....

The common factors are:

.....

The greatest common factor (GCF) is:

Practice 2 The fourth-grade students are going on a school trip.

There are 36 girls and 27 boys. The students will be divided into equal groups of girls and equal groups of boys.

What is the largest number of groups that can be formed so that each group has the same number of students?

How many girls will be in each group? How many boys will be in each group?

.....

.....

.....

Practice 3

Amira and her friends are going for a walk. Amira wants to take apples and some candy on the journey. She has **24 apples** and **36 bags of candy**. How many snacks can Amira take if each package contains exactly the same number of apples and the exact same number of candy bags? How many apples are there in each package? How many bags of candy are there in each package?

Quiz?

10

1 Choose the correct answer:

- a is a common factor of 4 and 6. (12 or 4 or 5 or 2)
 b is the GCF of 12 and 6. (12 or 6 or 3 or 2)
 c The common factor of all numbers is (0 or 1 or 2 or 3)

2 Find the **greatest common factor** of **14** and **35**:

- a Factors of 14 are:
 b Factors of 35 are:
 c The common factors are:
 d The GCF is:

3 Nadia has **10 pencils** and **15 erasers**. She wants to put them in groups so that each group has the same number of items.

- a The number of groups =
 b The number of pencils in each group =
 c The number of erasers in each group =

Unit

6

Factors and Multiples

Concept 6.2

Understanding Multiples

Lessons

4–6

Identifying Multiples of Whole Numbers

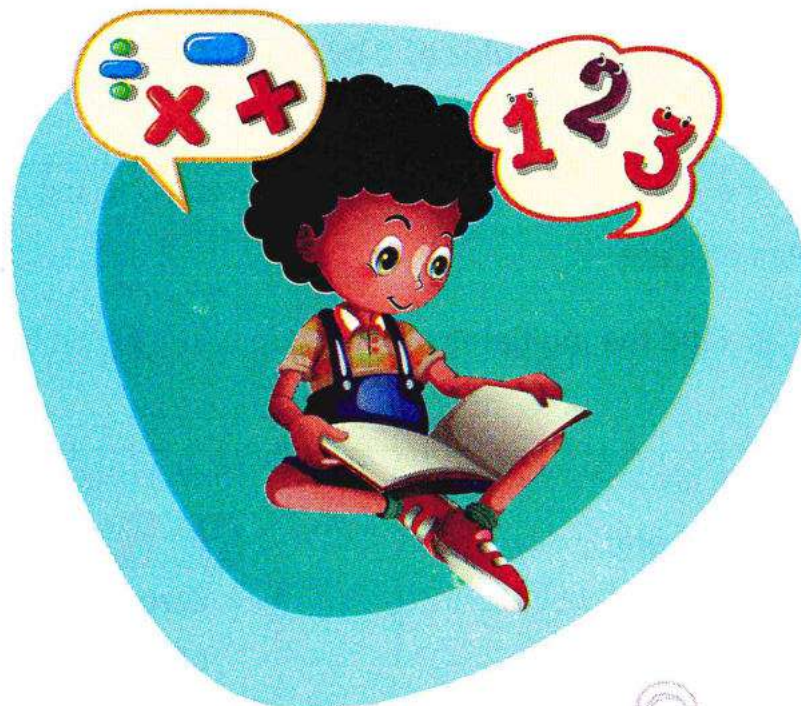
Common Multiples

Relationships Between Factors and Multiples

Learning Objectives:

By the end of these lessons, the student will be able to:

- Define multiples of whole numbers.
- Identify multiples of whole numbers.
- Identify common multiples of two numbers.
- Explain the relationship between factors and multiples.
- Determine if a number is a factor or a multiple of another number.



4-6

Lessons

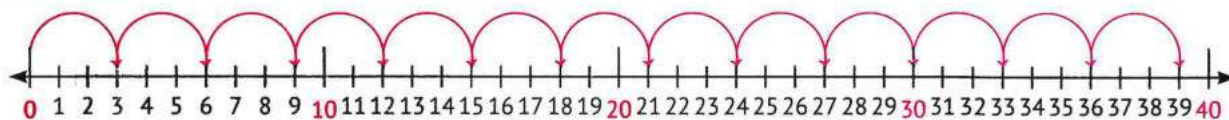
Identifying Multiples of Whole Numbers Common Multiples Relationships Between Factors and Multiples

Multiple

- A multiple is the **product** of a given whole number **multiplied** by any other whole number.
- 12 is a multiple of 3 and 4 because $3 \times 4 = 12$.
- 12 is a multiple of 3, by 4 times. • 12 is a multiple of 4, by 3 times.

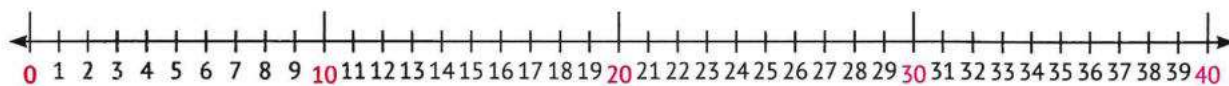
Multiples of a number can be found by **skip counting on the number line**:

Example:



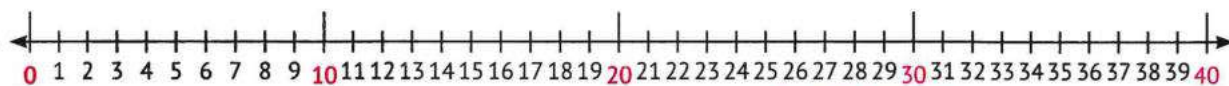
– The multiples of 3 are: 0 , 3 , 6 , 9 , 12 , 15 , 18 , 21 , 24 ,
27 , 30 , 33 , 36 , 39 ,

Practice 1 Find the multiples of 2 by **skip counting on the number line**:



The multiples of 2 are:

Practice 2 Find the multiples of 5 by **skip counting on the number line**:



The multiples of 5 are:

.....
.....

NOTE

- Zero is a common multiple of all numbers.

Practice 3

Use the following 100 Chart to color the multiples:

- a Color the multiples of 4.

The multiples of 4 are:

.....

.....

.....

.....

91	92	93	94	95	96	97	98	99	100
81	82	83	84	85	86	87	88	89	90
71	72	73	74	75	76	77	78	79	80
61	62	63	64	65	66	67	68	69	70
51	52	53	54	55	56	57	58	59	60
41	42	43	44	45	46	47	48	49	50
31	32	33	34	35	36	37	38	39	40
21	22	23	24	25	26	27	28	29	30
11	12	13	14	15	16	17	18	19	20
1	2	3	4	5	6	7	8	9	10

- b Color the multiples of 10.

The multiples of 10 are:

.....

.....

.....

.....

91	92	93	94	95	96	97	98	99	100
81	82	83	84	85	86	87	88	89	90
71	72	73	74	75	76	77	78	79	80
61	62	63	64	65	66	67	68	69	70
51	52	53	54	55	56	57	58	59	60
41	42	43	44	45	46	47	48	49	50
31	32	33	34	35	36	37	38	39	40
21	22	23	24	25	26	27	28	29	30
11	12	13	14	15	16	17	18	19	20
1	2	3	4	5	6	7	8	9	10

Practice 4

Answer the following:

- a Skip count by 8 and fill in the blanks:

....., 8,, 24,, 48,,,

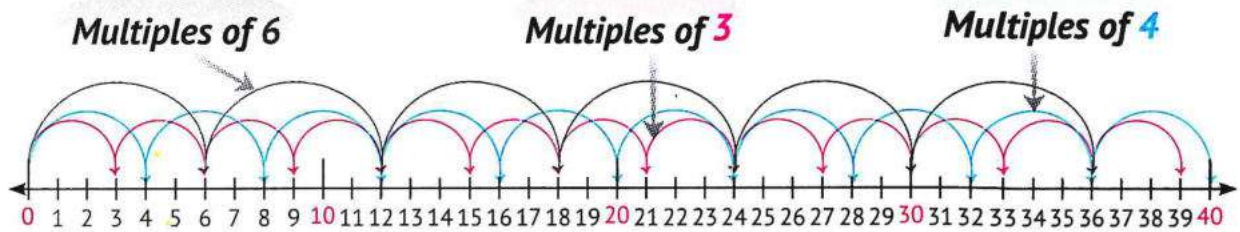
- b Write 10 multiples of 6:

- c Write 5 multiples of 7:

- d Circle the numbers that are multiples of 9:

19 , 27 , 54 , 99 , 39 , 42 , 36 , 45 , 66 , 78 , 100

Example: Find the multiples of 3, 4, and 6 using skip counting on the number line:



- The multiples of 3 are: 0, 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, 36, 39.
- The multiples of 4 are: 0, 4, 8, 12, 16, 20, 24, 28, 32, 36, 40.
- The multiples of 6 are: 0, 6, 12, 18, 24, 30, 36.
- The common multiples of 3, 4, and 6 are: 0, 12, 24, 36.

91	92	93	94	95	96	97	98	99	100
81	82	83	84	85	86	87	88	89	90
71	72	73	74	75	76	77	78	79	80
61	62	63	64	65	66	67	68	69	70
51	52	53	54	55	56	57	58	59	60
41	42	43	44	45	46	47	48	49	50
31	32	33	34	35	36	37	38	39	40
21	22	23	24	25	26	27	28	29	30
11	12	13	14	15	16	17	18	19	20
1	2	3	4	5	6	7	8	9	10

Practice 5 Find the multiples

of each of 2 and 3 up to 20. Then, find the common multiples of both numbers.

Key:

The multiples of 3

The multiples of 4

The multiples of 6

- The multiples of 2 are:
- The multiples of 3 are:
- The common multiples of the two numbers are:

Practice 6 Find the **multiples** of each of **4** and **6** up to **30**. Then, find the **common multiples** of both numbers.

- The multiples of **4** are:
- The multiples of **6** are:
- The **common multiples** of the two numbers are:

Practice 7 Find **two common multiples** of:

- a **4** and **8**: and
- b **2** and **5**: and
- c **6** and **8**: and
- d **7** and **6**: and

NOTE

- The **product** of any **two numbers** is a **common multiple** of them.

Practice 8 Complete:

- a The common multiples of **2** and **5** are:
0 , 10 , 20 , 30 , , , ,
- b The common multiples of **3** and **4** are:
0 , 12 , 24 , 36 , , , ,
- c The common multiples of **6** and **8** are:
0 , 24 , 48 , , ,

Remember

$$\begin{array}{ccccc}
 \boxed{4} & \times & \boxed{7} & = & \boxed{28} \\
 \downarrow & & \downarrow & & \downarrow \\
 \text{Factor} & & \text{Factor} & & \text{Multiple}
 \end{array}$$

- From this figure:

4 and **7** are factors of **28**. & **28** is a multiple of **4** and **7**.

Practice 9 Complete the following:

- a If $35 = 5 \times 7$, then { is a multiple of the two numbers and
 and are factors of the number
- b If = $\times$, then { **48** is a multiple of the two numbers **6** and
6 and are factors of the number
- c An **even** number is a multiple of **3, 4,** and **6** and lies between **20** and **30**.
 The number is
- d An **odd** number is a multiple of **3** and **9** and lies between **20** and **40**.
 The number is
- e The relationship between **2, 3,** and **6** is that

Quiz?

10

1 Complete the following:

- a Write 5 multiples of 6: (..... , , , ,)
- b Write two common multiples of 8 and 6: (..... ,)
- c The relationship between 2, 4, and 8 is that

2 Choose the correct answer:

- a is a multiple of 8. (2 or 16 or 12 or 9)
- b is a common multiple of 8 and 3. (15 or 32 or 24 or 27)
- c If $4 \times 5 = 20$, then 20 is a of 4 and 5.
 (difference or multiple or factor or sum)

3 Find the **multiples** of each of **4** and **6** up to **30**. Then find the **common multiples** of both numbers:

- a The multiples of 4 are:
- b The multiples of 6 are:
- c The common multiples of the two numbers are:

Unit

7

Multiplication and Division: Computation and Relationships

Concept 7.1

Multiplying by 1-Digit and 2-Digit Numbers

Lesson

1

The Area Model Strategy

Learning Objectives:

By the end of this lesson, the student will be able to:

- Use an area model to represent two-digit by one-digit multiplication.
- Explain how he/she uses place value to multiply.

Lesson

2

The Distributive Property

Learning Objectives:

By the end of this lesson, the student will be able to:

- Use an area model to multiply a one-digit number by a whole number with up to four digits.
- Explain the Distributive Property of Multiplication.
- Apply the Distributive Property of Multiplication to multiply a one-digit number by a whole number with up to four digits.

Lessons

3&4

The Partial Products Algorithm Multiply by a 1-Digit Number

Learning Objectives:

By the end of these lessons, the student will be able to:

- Use the partial products algorithm to multiply a one-digit number by a whole number with up to four digits.
- Estimate products.
- Use the standard algorithm to multiply a one-digit number by a whole number with up to four digits.

Lesson

5

Multiply a 2-Digit Number by a Multiple of 10

Learning Objectives:

By the end of this lesson, the student will be able to:

- Identify patterns when multiplying two multiples of 10.
- Multiply a two-digit number by a multiple of 10.
- Assess the reasonableness of an answer using estimation and mental math.

1

Lesson

The Area Model Strategy

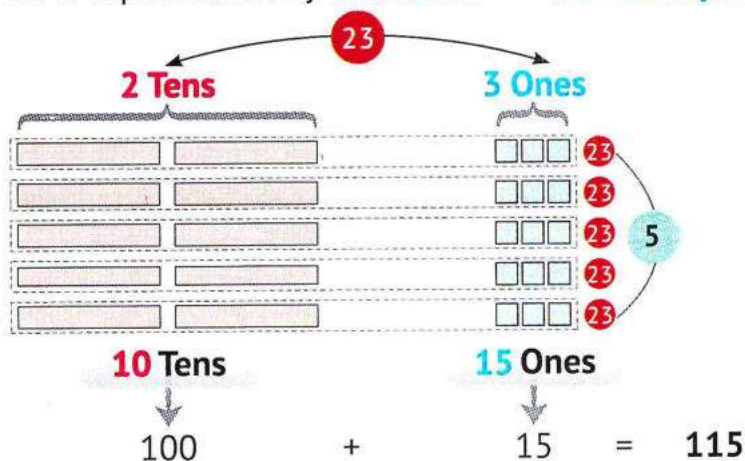
First: ► Base Ten Blocks:

When multiplying a 1-digit number by a 2-digit number:

- We represent the 2-digit number, the **Tens** with **lines** and the **Ones** with **small squares**.
- We **repeat** the number according to the 1-digit number.

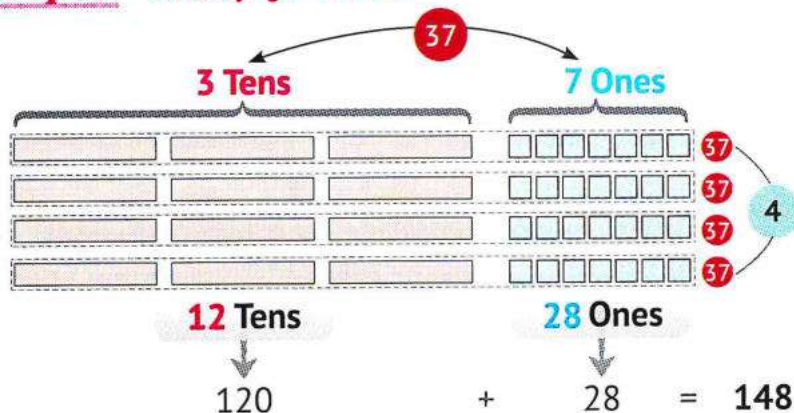
Example: Multiply: 23×5

- 23 is represented by **two lines** and **5 small squares** repeated **5 times**, as follows:



So, $23 \times 5 = 115$

Example: Multiply: 4×37

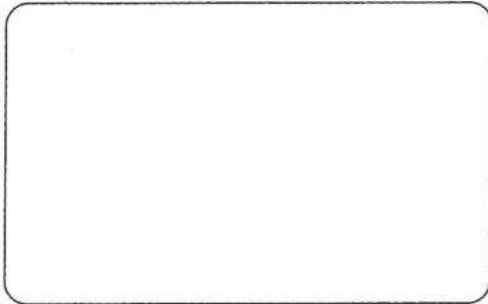


So, $4 \times 37 = 148$

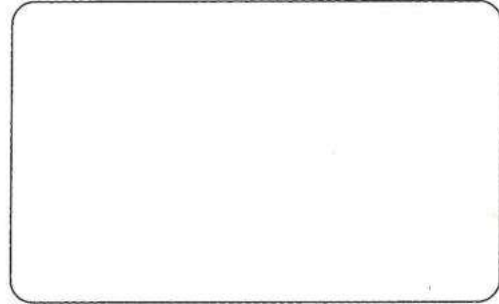
Practice 1

Multiply using the **base ten blocks**:

a $16 \times 4 =$



b $28 \times 3 =$



Second: ▶ Rectangle Area Model:

When multiplying a 1-digit number by a 2-digit number:

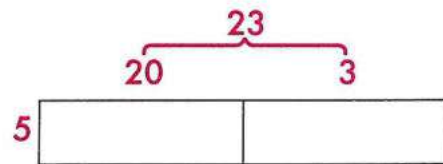
Example: Multiply: 23×5

1



- Draw a rectangle and divide it into **two parts** by drawing a vertical line.

2



- Represent the 2-digit number on the **long side** and the 1-digit number on the **short side**.

3

	20	3
5	$5 \times 20 = 100$	$5 \times 3 = 15$

- Multiply the 1-digit number by both components of the other number.

4

	20	3
5	$5 \times 20 = 100$	$5 \times 3 = 15$

$100 + 15 = 115$

- Add the products of the multiplication to get the final result.

So, $23 \times 5 = 115$

Example: Multiply: 6×78

$$6 \times 78 = 468$$

$6 \times 70 = 420$	$6 \times 8 = 48$
---------------------	-------------------

$$420 + 48 = 468$$

Practice 2 Use the **rectangle area model** to multiply:

a $5 \times 24 =$

$\times =$	$\times =$
------------	------------

$$+$$

$$=$$

b $9 \times 58 =$

$\times =$	$\times =$
------------	------------

$$+$$

$$=$$

c $67 \times 4 =$

$\times =$	$\times =$
------------	------------

$$+$$

$$=$$

d $98 \times 7 =$

$\times =$	$\times =$
------------	------------

$$+$$

$$=$$

Practice 3 A car travels **78** kilometers in **one** hour. How many kilometers can the car travel in **9** hours?

(Use the **rectangle area model**.)

$\times =$	$\times =$
------------	------------

$$+$$

$$=$$

$\times =$	$\times =$
------------	------------

$$+$$

$$=$$

Practice 4

The school bus carries **32** students per trip. What is the **maximum** number of students that the bus can carry during **6** trips? (Use the **rectangle area model**.)

$\times$	$=$	$\times$	$=$
----------	-----	----------	-----

+

$=$



10

1 Use the **rectangle area model** to multiply:

$\times$	$=$	$\times$	$=$
----------	-----	----------	-----

+

$=$

a $25 \times 7 =$

$\times$	$=$	$\times$	$=$
----------	-----	----------	-----

+

$=$

b $83 \times 4 =$

2 Write the **multiplication problem** represented by each model, and then find the **product** of the multiplication:

$4 \times 20 = 80$	$4 \times 7 = 28$
--------------------	-------------------

+

$=$

a $\times =$

50	3
$\times$	$=$
$\times$	$=$

+

$=$

b $\times =$

3 Salma saves **67 pounds** per month. How many pounds does Salma save in **4 months**? (Use the **rectangle area model**.)

$\times$	$=$	$\times$	$=$
----------	-----	----------	-----

+

$=$

2

Lesson

The Distributive Property

Remember

$$56 = 50 + 6$$

$$3,729 = 3,000 + 700 + 20 + 9$$

Expanded Form

$$729 = 700 + 20 + 9$$

$$95,392 = 90,000 + 5,000 + 300 + 90 + 2$$

The Distributive Property of Multiplication

The Distributive Property is used to facilitate the multiplication process by decomposing the largest number in the expanded form.

Example: 6×53

$$\begin{aligned} &= 6 \times (50 + 3) \\ &= (6 \times 50) + (6 \times 3) \\ &= 300 + 18 = 318 \end{aligned}$$

Example: 3×425

$$\begin{aligned} &= 3 \times (400 + 20 + 5) \\ &= (3 \times 400) + (3 \times 20) + (3 \times 5) \\ &= 1,200 + 60 + 15 = 1,275 \end{aligned}$$

Example: $5 \times 2,146$

$$\begin{aligned} &= 5 \times (2,000 + 100 + 40 + 6) \\ &= (5 \times 2,000) + (5 \times 100) + (5 \times 40) + (5 \times 6) \\ &= 10,000 + 500 + 200 + 30 = 10,730 \end{aligned}$$

Practice 1

Use the **Distributive Property** to solve the following problems:

a $4 \times 32 = 4 \times (\quad + \quad)$
 $= (4 \times \quad) + (4 \times \quad)$
 $= \quad + \quad = \quad$

b $6 \times 374 = \quad \times (\quad + \quad + \quad)$
 $= (\quad \times \quad) + (\quad \times \quad) + (\quad \times \quad)$
 $= \quad + \quad + \quad = \quad$

$$\begin{aligned} \text{c } 9 \times 5,234 &= \dots \times (\dots + \dots + \dots + \dots) \\ &= (\dots \times \dots) + (\dots \times \dots) + (\dots \times \dots) \\ &\quad + (\dots \times \dots) \\ &= \dots + \dots + \dots + \dots = \dots \end{aligned}$$

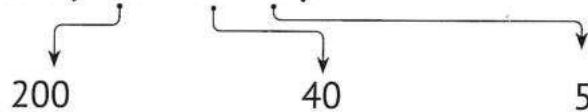
$$\begin{aligned} \text{d } 4 \times 2,687 &= \dots \times (\dots + \dots + \dots + \dots) \\ &= (\dots \times \dots) + (\dots \times \dots) + (\dots \times \dots) \\ &\quad + (\dots \times \dots) \\ &= \dots + \dots + \dots + \dots = \dots \end{aligned}$$

**Using the Rectangle Area Model to Multiply
a 1-Digit-Number by a Whole Number up to 4 Digits**

Example:

Multiply: 8×245

- Draw a rectangle and divide it into 3 parts.
- Decompose the number 245 into: (200 + 40 + 5).



$$8 \times 245 = 1,960$$

8	$8 \times 200 = 1,600$	$8 \times 40 = 320$	$8 \times 5 = 40$			
	1,600	+	320	+	40	= 1,960

Example:

Multiply: $7 \times 6,312$

	6,000	300	10	2					
$7 \times 6,312 = 44,184$	7	$7 \times 6,000 = 42,000$	$7 \times 300 = 2,100$	$7 \times 10 = 70$	$7 \times 2 = 14$				
		42,000	+	2,100	+	70	+	14	= 44,184

Practice 2 Use the **rectangle area model** to solve the following problems:

a $8 \times 375 =$



b $9 \times 216 =$



c $3 \times 6,475 =$

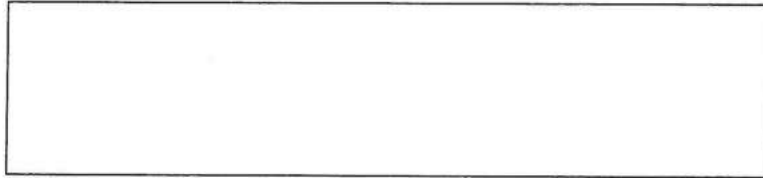


d $4,962 \times 8 =$



Practice 3

If the length of a car is 245 cm, how long are 4 cars?
(Use the rectangle area model.)



Quiz?

10

1 Complete the following:

a $4 \times (80 + 9) = (4 \times \dots) + (4 \times \dots)$

b $\dots \times (\dots + \dots + \dots) = (6 \times 500) + (6 \times 30) + (6 \times 7)$

c $9 \times (\dots + \dots) = (9 \times 30) + (9 \times 4)$

2 Use the Distributive Property to solve the following problems:

a $3 \times 67 = (3 \times \dots) + (3 \times \dots) = \dots + \dots = \dots$

b $8 \times 403 = (8 \times \dots) + (8 \times \dots) = \dots + \dots = \dots$

c $4 \times 247 = (4 \times \dots) + (4 \times \dots) + (4 \times \dots) = \dots + \dots + \dots = \dots$

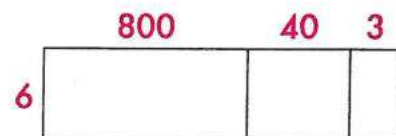
3 Hisham bought 8 kg of oranges; the price of one kilogram was 890 piastres. How much did he pay for the oranges?

(Use the Distributive Property.)

4 Complete using the following area model:

$(6 \times \dots) + (6 \times \dots) + (6 \times \dots)$

$= \dots + \dots + \dots = \dots$



3&4 Lessons

The Partial Products Algorithm Multiply by a 1-Digit number

The Partial Products Algorithm

Each arithmetic operation is a “part” of a larger product.

Example: Multiply: 328×7

Answer Expand the **largest** number:

$$(328 = 300 + 20 + 8)$$

$$\begin{array}{r} 328 \\ \times 7 \\ \hline \end{array}$$

Step 1 ▶ Multiply the 1-digit number by the **Hundreds**. $+ 2,100$ (300×7)

Step 2 ▶ Multiply the 1-digit number by the **Tens**. $+ 140$ (20×7)

Step 3 ▶ Multiply the 1-digit number by the **Ones**. $+ 56$ (8×7)

Step 4 ▶ Add the products of the **Hundreds**, **Tens**, and **Ones**. $2,296$

Example: Multiply: 83×9

$$\begin{array}{r} 83 \\ \times 9 \\ \hline 720 \quad (80 \times 9) \\ + 27 \quad (3 \times 9) \\ \hline 747 \end{array}$$

Example: Multiply: $3,702 \times 6$

$$\begin{array}{r} 3,702 \\ \times 6 \\ \hline + 18,000 \quad (3,000 \times 6) \\ + 4,200 \quad (700 \times 6) \\ + 12 \quad (2 \times 6) \\ \hline 22,212 \end{array}$$

Practice 1

Use the **partial products algorithm** to multiply:

a $256 \times 8 =$

$$\begin{array}{r} 256 \\ \times 8 \\ \hline \end{array}$$

(..... X)

(..... X)

(..... X)

.....

b $3,986 \times 6 =$

$$\begin{array}{r} 3,986 \\ \times 6 \\ \hline \end{array}$$

(..... X)

(..... X)

(..... X)

(..... X)

.....

c $63 \times 9 =$

$$\begin{array}{r} 63 \\ \times 9 \\ \hline \end{array}$$

(..... X)

+ (..... X)

.....

d $702 \times 8 =$

$$\begin{array}{r} 702 \\ \times 8 \\ \hline \end{array}$$

(..... X)

+ (..... X)

.....

e $125 \times 4 =$

f $9 \times 8,465 =$

Similarities in Models

Example: Multiply: 162×8

- Estimate the product, use the rectangle area model and the partial products algorithm.

Product Estimation	Rectangle Area Model			Partial Products Algorithm
Estimation: $200 \times 8 = 1,600$ (Use rounding to the nearest Hundred)	100	60	2	162
	8 $8 \times 100 = 800$	$8 \times 60 = 480$	$8 \times 2 = 16$	$\begin{array}{r} \times 8 \\ 162 \\ \hline 800 \\ + 480 \\ + 16 \\ \hline 1,296 \end{array}$
	800	+ 480	+ 16	(100 $\times$ 8)
	= 1,296			(60 $\times$ 8)
				(2 $\times$ 8)

Practice 2 Complete the following table:

Problem	Product Estimation	Rectangle Area Model	Partial Products Algorithm
a 237×6 =			
b $7,425 \times 9$ =			

The Standard Multiplication Algorithm

Follow the steps below to multiply 132×8 using the **standard multiplication algorithm**:

- ① Write the numbers **vertically** with the **largest number** on **top**.
- ② Start by multiplying the **Ones** ($8 \text{ Ones} \times 2 \text{ Ones} = 16 \text{ Ones}$).
- ③ Write **6** in the **Ones** place below the line.
- ④ Write **1** representing **1 Ten** above 3 (this is called **regrouping**). **Keep 1**
- ⑤ Next, multiply the **Tens** ($8 \text{ Ones} \times 3 \text{ Tens} = 24 \text{ Tens}$).
- ⑥ By adding the **1 Ten** (from the previous step) to the **24 Tens**, you get **25 Tens**.
- ⑦ Write **5** in the **Tens** place below the line.
- ⑧ Regroup by writing **2** representing **2 Hundreds** above the 2 in the **Hundreds** place. **Keep 2**
- ⑨ And finally, multiply the **Hundreds** ($8 \text{ Ones} \times 1 \text{ Hundred} = 8 \text{ Hundreds}$).
- ⑩ By adding the **2 Hundreds** (from the previous step) to **8 Hundreds**, you get **10 Hundreds**.
10 Hundreds = one thousand.
 Write 0 in the **Hundreds** place and 1 in the **Thousands** place below the line.

$$\begin{array}{r}
 \overset{2}{1} \overset{1}{1} 3 2 \\
 \times \quad 8 \\
 \hline
 6 \\
 + \quad 50 \\
 + \quad 1,000 \\
 \hline
 1,056
 \end{array}$$

Practice 3 Use the **standard multiplication algorithm** to multiply:

a

$$\begin{array}{r}
 48 \\
 \times 7 \\
 \hline
 \end{array}$$

b

$$\begin{array}{r}
 324 \\
 \times 6 \\
 \hline
 \end{array}$$

c

$$\begin{array}{r}
 3,248 \\
 \times 9 \\
 \hline
 \end{array}$$

d

$$\begin{array}{r}
 36 \\
 \times 6 \\
 \hline
 \end{array}$$

e

$$\begin{array}{r}
 298 \\
 \times 4 \\
 \hline
 \end{array}$$

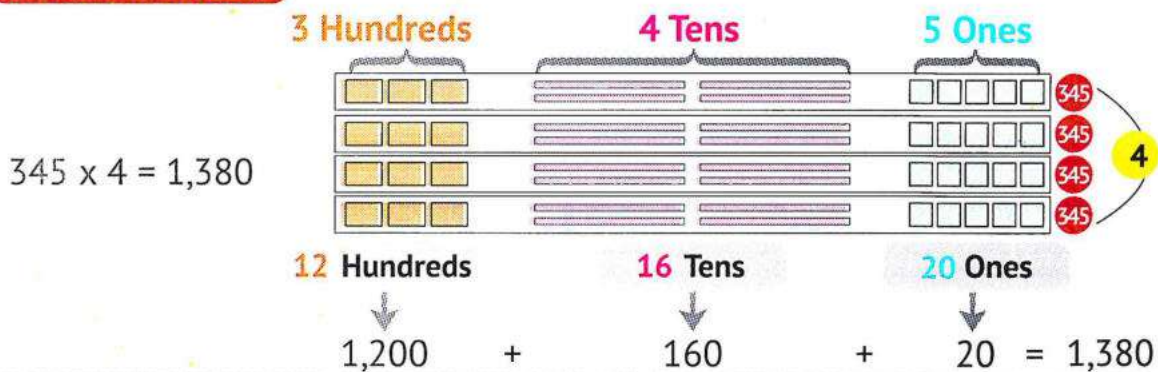
f

$$\begin{array}{r}
 7,866 \\
 \times 5 \\
 \hline
 \end{array}$$

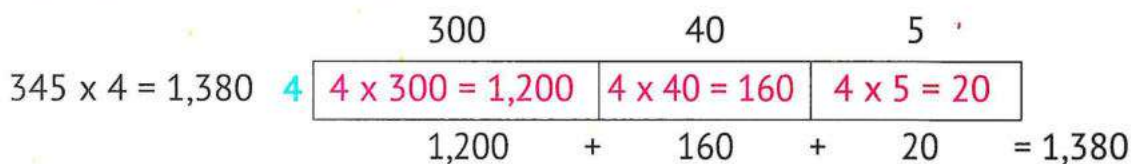
Summary

Strategies for Multiplying a One-digit Number by a Whole Number Up to Four Digits

Base Ten Blocks



Rectangle Area Model



Distributive Property

$$\begin{aligned}
 4 \times 345 &= 4 \times (300 + 40 + 5) \\
 &= (4 \times 300) + (4 \times 40) + (4 \times 5) \\
 &= 1,200 + 160 + 20 = 1,380
 \end{aligned}$$

Standard Multiplication Algorithm

$$\begin{array}{r}
 \textcircled{1} \textcircled{2} \\
 345 \\
 \times 4 \\
 \hline
 0 \\
 + 80 \\
 + 1,300 \\
 \hline
 1,380
 \end{array}$$

Partial Products Algorithm

$$\begin{array}{r}
 345 \\
 \times 4 \\
 \hline
 1,200 \quad (300 \times 4) \\
 + 160 \quad (40 \times 4) \\
 + 20 \quad (5 \times 4) \\
 \hline
 1,380
 \end{array}$$

Quiz?

10

1 Choose the correct answer:

- a $6,000 + 300 + 8 = \dots\dots\dots$ (638 or 6,038 or 6,308 or 6,380)
 b $3 \times 5,020$ $5 \times 3,012$ (< or = or >)
 c $(30 \times 4) + (8 \times 4) = \dots\dots\dots$ (38×44 or 308×4 or 38×4 or 38×40)

2 Solve using the partial products algorithm:

a 29×4

b 5×207

3 Solve using the standard algorithm:

a 735×5

b 630×5

4 If one day has 24 hours, how many hours are in 9 days?

5

Lesson

Multiply a 2-Digit Number by a Multiple of 10

Multiplying a 2-Digit Number by a Multiple of 10

Example: Multiply: 62×30

First: Using the **rectangle area model**:

	60	2
$62 \times 30 = 1,860$	$30 \times 60 = 1,800$	$30 \times 2 = 60$
	$1,800 + 60 = 1,860$	

Second: Using the **Distributive Property**:

$$\begin{aligned}
 62 \times 30 &= (60 + 2) \times 30 \\
 &= (60 \times 30) + (2 \times 30) \\
 &= 1,800 + 60 \\
 &= 1,860
 \end{aligned}$$

Third: Using the **partial products algorithm**:

$$\begin{array}{r}
 62 \\
 \times 30 \\
 \hline
 1,800 \quad (60 \times 30) \\
 + 60 \quad (2 \times 30) \\
 \hline
 1,860
 \end{array}$$

Practice 1 Use the **rectangle area model** to multiply:

a $48 \times 20 =$

b $40 \times 74 =$

Practice 2

Use the **partial products algorithm** to multiply:

a $35 \times 80 =$

b $70 \times 82 =$

Practice 3

Use the **partial products algorithm** to multiply:

a $90 \times 85 =$

b $27 \times 30 =$

NOTE

- We can multiply directly as:

$$\overset{\textcircled{1}}{24} \times 30 = 720$$

Practice 4

Multiply:

a $15 \times 30 =$

b $14 \times 50 =$

c $42 \times 20 =$

d $60 \times 40 =$



10

1 Choose the correct answer:

a $80 \times 12 =$

(8,160 or 80 or 960 or 96)

b $60 \times 50 =$

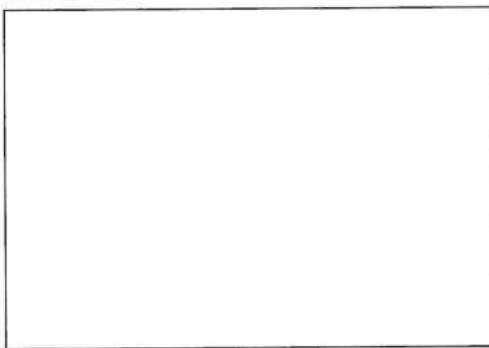
(30 or 300 or 3,000 or 1,100)

c 25×80 205×8

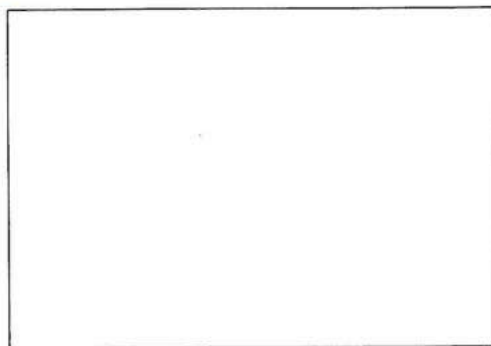
(< or = or >)

2 Use the **area model** to solve:

a 60×18



b 23×40



3 Use the **Distributive Property** to solve:

a $80 \times 25 = (\dots \times \dots) + (\dots \times \dots)$
 $= \dots + \dots = \dots$

b $20 \times 68 = (\dots \times \dots) + (\dots \times \dots)$
 $= \dots + \dots = \dots$

4 If one month has **30 days**, how many days are in **24 months**?

.....

.....

Unit

7

Multiplication and Division: Computation and Relationships

Concept 7.2

Dividing by 1-Digit Divisors

Lessons 6&7

Exploring Remainders Patterns in Division

Learning Objectives:

By the end of these lessons, the student will be able to:

- Identify the dividend, divisor, and quotient of a division problem.
- Solve division problems.
- Explain what a remainder represents in a division problem.
- Use place value, multiplication facts, and patterns with zeros to divide multiples of 10, 100, and 1,000 by one-digit divisors.

Lesson 8

The Area Model and Division

Learning Objective:

By the end of this lesson, the student will be able to:

- Use rectangle area models to represent and solve division problems.

Lesson 9

The Partial Quotients Algorithm

Learning Objective:

By the end of this lesson, the student will be able to:

- Use the partial quotients algorithm to divide dividends with up to 4 digits by one-digit divisors.

Lessons 10&11

The Standard Division Algorithm Division and Multiplication

Learning Objectives:

By the end of these lessons, the student will be able to:

- Estimate quotients using place value and patterns in multiplication and division.
- Use the standard algorithm to solve division problems.
- Use properties of place value to accurately record quotients.
- Use multiplication to check answers to division problems.
- Organize information in story problems to determine when to add, subtract, multiply, or divide.

6&7 Lessons

Exploring Remainders Patterns in Division

Here are three story problems to be read carefully:

There are 72 students at the playground. We need to divide the students into 8 teams.
How many students are there in each team?

Solution:

$$72 \div 8 = 9 \text{ teams}$$

There are 72 students at the playground. We need to divide the students into teams so that each team includes 9 students. How many teams can be formed?

Solution:

$$72 \div 9 = 8 \text{ teams}$$

There are 8 teams playing football, and each team has 9 players.
How many students are there in each team?

Solution:

$$8 \times 9 = 72 \text{ students}$$

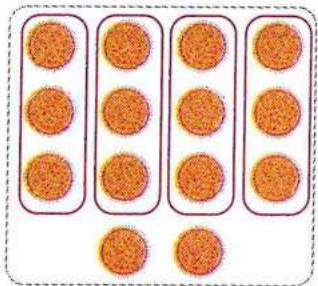
NOTES

From the above:

- The numbers are the same, and the problems are all about equal teams. However, you can use different operations to solve each of these problems.
- **Multiplication:** things that are already in equal groups.
- **Division:** things that should be divided into equal groups.

Example:

- Salem brought **14** pies to give to **four** of his friends. How can Salem divide the pies evenly?



The corresponding graph can be used to solve this problem. When you divide the pies among his **four** friends, each person's share will be **3** pies, and the remaining pies will be **2**.

Solution: $14 \div 4 = 3$ and the remainder is 2.

In the previous example, we find that:

$$\boxed{14} \div \boxed{4} = \boxed{3} \text{ Remainder (R) } \boxed{2}$$

Dividend	Divisor	Quotient	Remainder
It is the number that is divided in the problem. (The sum of things)	It is the number of equal groups or the number in each group.	It is the solution of the division problem.	It is the remaining value after all things are divided equally.

NOTE

$$\boxed{\text{Dividend}} = (\boxed{\text{Divisor}} \times \boxed{\text{Quotient}}) + \boxed{R}$$

Practice 1 Complete the following table:

Problem	Dividend	Divisor	Quotient	Remainder
a $25 \div 4$	.....	.....	.....	.....
b $\dots \div \dots$	30	6	.....	.....
c $\dots \div \dots$	.....	5	5	3
d $\dots \div \dots$	16	.....	3	1
e $15 \div 2$	.....	.....	.....	.....

Practice 2 The swimming team will take a bus to go to the swimming competition. Each bus accommodates 40 students. 60 students will attend this competition.

How many buses are required to accommodate all students?
Will there be empty seats? And how many?

Solution:

Practice 3 There are 48 mugs that need to be packed into boxes for shipping. Each box can hold five mugs. How many boxes are needed to pack and ship all the mugs?

Solution:

Dividing Multiples of 10, 100, and 1,000 by a 1-Digit number

When dividing multiples of 10, 100, and 1,000 by a one-digit number, we do the following:

Example: Divide:

a $600 \div 3 = \dots\dots\dots$

b $2,400 \div 4 = \dots\dots\dots$

c $400 \div 5 = \dots\dots\dots$

Solution:

a To divide $600 \div 3$,

we note that: $3 \times 2 = 6$

So, $3 \times 20 = 60$, $3 \times 200 = 600$

$$600 \div 3 = 200$$

b To divide $2,400 \div 4$,

we note that: $4 \times 6 = 24$

So, $4 \times 60 = 240$, $4 \times 600 = 2,400$

So, $2,400 \div 4 = 600$

$$2,400 \div 4 = 600$$

c To divide $400 \div 5$,

we note that: $5 \times 8 = 40$

So, $5 \times 80 = 400$, $400 \div 5 = 80$

$$400 \div 5 = 80$$

Practice 4 Complete the following table as in the example:

Equation	Related Fact	Quotient
Example: $8,000 \div 4$	$8 \div 4 = 2$	2,000
a $9,000 \div 3$		
b $15,000 \div 5$		
c $28,000 \div 4$		
d $3,000 \div 5$		

Practice 5 Find the quotient of:

a $2,400 \div 8 =$

b $2,000 \div 4 =$

c $10,000 \div 5 =$

d $3,000 \div 6 =$

Practice 6 On Monday morning at 7:00 a.m., 900 workers need to travel to work by metro. Each metro train has 9 cars, and each car can hold 90 people. Can all the workers travel on a single metro train? (Explain your ideas using numbers, words, and symbols.)

.....

.....

Practice 7 Malik wanted to make falafel. He bought 360 beans from the store. He read that he would need 6 beans for each falafel patty. How many falafel patties can he make with all the beans?

.....

.....

Practice 8 There are **540** colored pencils in a large basket. Each pupil is asked to place **9** colored pencils into a small box. How many small boxes will be needed to complete this task?

.....

.....

Quiz?

10

1 Choose the correct answer:

- a** $3,200 \div \dots = 400$ (8 or 80 or 800 or 8,000)
- b** If $8 \times 3 = 24$, then $24,000 \div 8 = \dots$ (3 or 30 or 300 or 3,000)
- c** $4,800 \div 6$ $64,000 \div 8$ (< or = or >)

2 Use the **area model** to solve:

- a** If $5 \times 8 = 40$, then $400 \div 5 = \dots$
- b** If $6 \times 7 = 42$, then $\dots \div 6 = 700$.
- c** The remainder of $38 \div 5$ is $\dots$

3 If one week has **7 days**, how many weeks are in **2,100 days**?

.....

.....

4 A teacher has **180 pens** and wants to distribute them equally among **6 students**. How many pens will each student get?

.....

.....

8

Lesson

The Area Model and Division

Using Rectangle Area Models to Represent and Solve Division Problems

This strategy can be understood through the following examples.

Example: Divide $96 \div 5$

First:

Draw a long rectangle and write "5" to the **left** side of the rectangle.

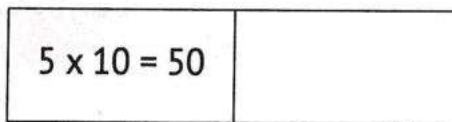
5



Second:

Draw a vertical line inside the rectangle and write in the **left** part " $5 \times 10 = 50$ " (as the divisor is two digits).
And write **under** this part "10".

5



10

Third:

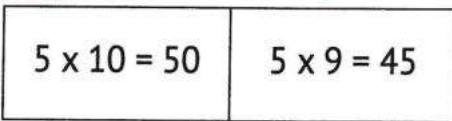
Subtract 96 (the dividend) $- 50 = 46$.

Divide: $46 \div 5 = 9$

and the remainder is 1.

Write " $5 \times 9 = 45$ " in the **remaining part** of the rectangle and write "9" **under** this part of the rectangle.

5



10

9

Fourth:

Add: $9 + 10 = 19$ (**Quotient**).

So, $96 \div 5 = 19$ and the remainder is 1

The solution can be verified by **multiplying** the quotient by the divisor, and then adding the remainder, if any, to get the **dividend**.

Verification:

$$19 \times 5 = 95, 95 + 1 = 96 \text{ (the dividend)}$$

Example: Use the rectangle area model to divide $919 \div 4$:

Hundreds:

There is 9 in the Hundreds place = 900

9 Hundreds $\div 4 = 2$ Hundreds.

The related fact is $4 \times 200 = 800$.

The remainder = $919 - 800 = 119$

4	4×200 = 800		
	200		

Tens:

$4 \times 10 = 40$,

40 is much smaller than 119.

$$4 \times 20 = 80$$

$4 \times 30 = 120$,

120 is more than 119.

So, 80 is the closest value to 119.

4	4×200 = 800	$4 \times 20 =$ 80	
	200	20	

$$119 - 80 = 39$$

Ones:

$4 \times 9 = 36$

36 is the closest value to 39.

$$39 - 36 = 3 \text{ (3 is the remainder.)}$$

The quotient = $200 + 20 + 9 = 229$

4	4×200 = 800	$4 \times 20 =$ 80	4×9 = 36
	200	20	9

So, $919 \div 4 = 229$ and the remainder is 3

Verification:

$$229 \times 4 = 916, 916 + 3 = 919 \text{ (the dividend)}$$

Example: Use the rectangle area model to divide $156 \div 6$:

Hundreds:

You can't use $6 \times 100 = 600$.

Because: $600 > 156$

Tens:

$6 \times 10 = 60$,

60 is much smaller than 150.

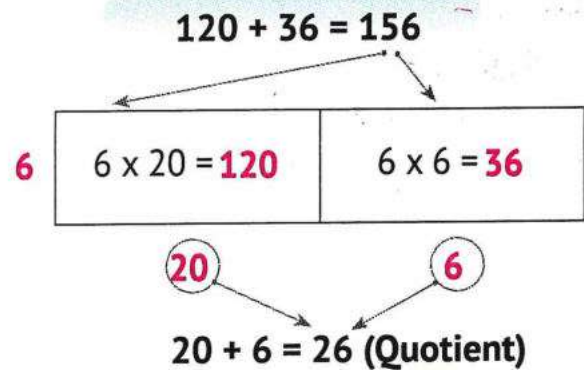
$6 \times 20 = 120$

$6 \times 30 = 180$,

180 is more than 150.

So, 120 is the closest value to 156.

$156 - 120 = 36$



Ones:

$6 \times 6 = 36$

$36 - 36 = 0$ (No remainder)

So, $156 \div 6 = 26$

Verification:

$26 \times 6 = 156$ (the dividend)

Practice 1

Use the rectangle area model to find the quotient in each of the following:

a $84 \div 6$

6	$6 \times \dots = \dots$	$6 \times \dots = \dots$
---	--------------------------	--------------------------

$84 \div 6 = \dots$

b $90 \div 4$

4	$4 \times \dots = \dots$	$4 \times \dots = \dots$
---	--------------------------	--------------------------

$90 \div 4 = \dots$

c $457 \div 3 =$

.....

d $3,200 \div 8 =$

.....

Practice 2 Sarah saved **864** coins last year. She wanted to put them in **8** pots. How many coins can she put in each pot?

(Use the **rectangle area model** to solve and show your steps.)

.....

Practice 3 There are **492** cars that need to use the parking lot in the stadium. The stadium includes **4** parking lots. Each parking lot must contain the same number of cars evenly. How many cars are there in each parking lot?

(Use the **rectangle area model** to solve and show your steps.)

.....

Quiz?

10

1 Choose the correct answer:

- a The problem that represents the opposite area model is

(315 ÷ 3 or 305 ÷ 3 or 103 ÷ 3 or 618 ÷ 3)

- b The model that represents $459 \div 9$ is:

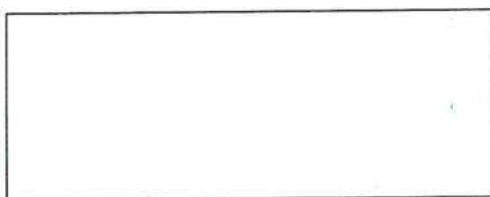
$\begin{array}{|c|c|} \hline 9 \times 5 & 9 \times 1 \\ \hline = 45 & = 9 \\ \hline 5 & 9 \\ \hline \end{array}$ or $\begin{array}{|c|c|} \hline 9 \times 50 & 9 \times 10 \\ \hline = 450 & = 90 \\ \hline 50 & 10 \\ \hline \end{array}$ or $\begin{array}{|c|c|} \hline 9 \times 50 & 9 \times 1 \\ \hline = 450 & = 9 \\ \hline 50 & 1 \\ \hline \end{array}$ or $\begin{array}{|c|c|} \hline 9 \times 5 & 9 \times 10 \\ \hline = 45 & = 90 \\ \hline 5 & 10 \\ \hline \end{array}$

- c $98 \div 4 =$

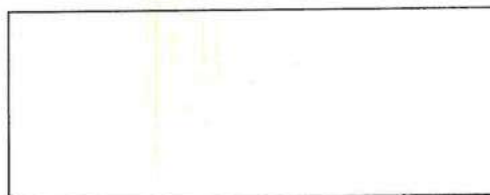
(24 R1 or 24 R2 or 24 R3 or 23 R2)

2 Find the **quotient** and complete the **rectangle area model**:

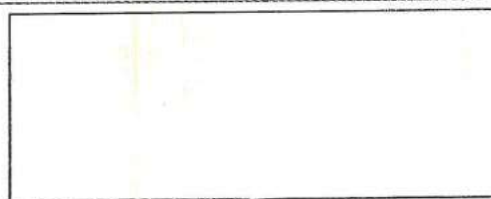
- a $67 \div 3$



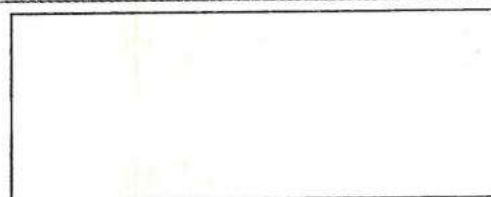
- b $646 \div 5$



- 3 Mona bought **7** kg of meat and she paid **2,135** pounds. What is the price of **1** kg of meat?



- 4 Sama walks **824** meters in **8** minutes, so she walks the same distance every minute. What distance do you walk in **one** minute?



9

Lesson

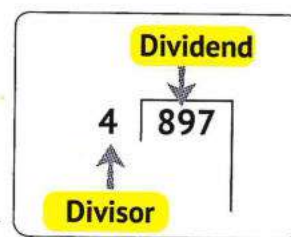
The Partial Quotients Algorithm

The Partial Quotients Algorithm:

Example: Divide: $897 \div 4$

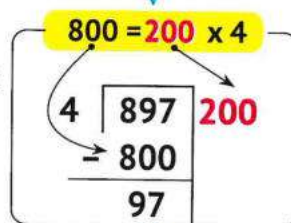
1

Draw the line as shown in the figure. Then, write the **dividend** at the **bottom** of the line and the **divisor** on the **left**.



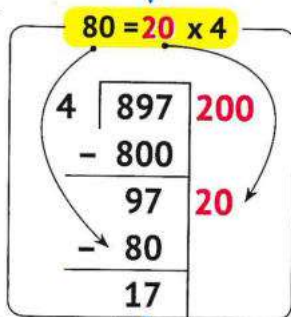
2

Start from the **left**; there are **8** in the Hundreds place. Notice that 800 is a multiple of 4: ($4 \times 200 = 800$). Write **200** to the **right** of the line as shown. Then, write **800 under 897**, then subtract.



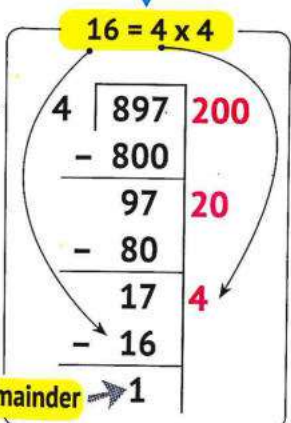
3

Move to **97** (the difference). Find the nearest multiple of 4 to 97 ($4 \times 20 = 80$); you can use another number. Write **20** to the **right** of the line, and write **80 below 97**, then subtract.



4

Move to **17** (the difference). The nearest multiple of 4 to 17 is 16: ($4 \times 4 = 16$). Write **4** to the **right** of the line, and write **16 under 17**, then subtract.

**The quotient** = $200 + 20 + 4 = 224$ **So, $897 \div 4 = 224$ and the remainder is 1.**

Example: Divide:

a $87 \div 4$

4	87	20
-	80	
	7	1
-	4	
	3	

$20 + 1 = 21$
Remainder 3

$87 \div 4 = 21$
and the remainder is 3

Verification:

$4 \times 21 = 84,$
 $84 + 3 = 87$

b $675 \div 5$

5	675	100
-	500	
	175	30
-	150	
	25	5
-	25	
	0	

$100 + 30 + 5 = 135$

$675 \div 5 = 135$

Verification:

$5 \times 135 = 675$

c $8,215 \div 3$

3	8,215	2,000
-	6,000	
	2,215	700
-	2,100	
	115	30
-	90	
	25	8
-	24	
	1	

$2,000 + 700 + 30 + 8$
 $= 2,738$ Remainder 1

$8,215 \div 3 = 2,738$
and the remainder is 1

Verification:

$3 \times 2,738 = 8,214,$
 $8,214 + 1 = 8,215$

Practice 1

Use the **partial quotients algorithm** to divide:

a $67 \div 4$

--

b $84 \div 3$

--

c $625 \div 5$

--

c $937 \div 4$

e $9,248 \div 4$

f $6,278 \div 3$

Practice 2 A juice shop owner owns **480** cups. If the shop owner wants to use these cups for **3 months**, how many cups should he use each month?

(Use the **partial quotients algorithm**.)

Quiz?

10

1 Choose the correct answer:

- a The problem that represents the opposite partial division is

($78 \div 6$ or $103 \div 6$ or $78 \div 13$ or $798 \div 6$)

- b The partial division that represents $956 \div 4$ is:

$\begin{array}{r} 4 \overline{) 956} \quad 200 \\ - 800 \\ \hline 156 \quad 30 \\ (- 120 \\ \hline 36 \quad 8 \\ - 32 \\ \hline 4 \end{array}$	or	$\begin{array}{r} 4 \overline{) 956} \quad 100 \\ - 400 \\ \hline 556 \quad 90 \\ - 360 \\ \hline 190 \quad 45 \\ - 180 \\ \hline 10 \end{array}$	or	$\begin{array}{r} 4 \overline{) 956} \quad 200 \\ - 800 \\ \hline 156 \quad 30 \\ - 120 \\ \hline 36 \quad 9 \\ - 36 \\ \hline 0 \end{array}$	or	$\begin{array}{r} 4 \overline{) 956} \quad 200 \\ - 800 \\ \hline 156 \quad 20 \\ - 80 \\ \hline 76 \quad 9 \\ - 36 \\ \hline 40 \end{array}$
---	----	---	----	---	----	---

- c $105 \div 6 =$ (3 R 17 or 17 R 3 or 18 R 1 or 16 R 3)

2 Use the **partial division** to solve:

- a If there are 345 students divided among 5 classes, how many students are there in each class?

.....

.....

- b Doina bought 6 pens and she paid 72 pounds. What is the price of one pen?

.....

.....

10&11 Lessons

The Standard Division Algorithm Division and Multiplication

Estimating Quotients

To estimate the quotient:

- We look for two numbers between which the **dividend** lies, and which are **multiples** of the **divisor**.
- We divide each of the two numbers by the **divisor** so that the result of the division is **limited** to the **quotient** of the division of **both numbers**.

Example: Estimate the quotient of:

a $68 \div 4$ $4 \times 10 = 40$
 $40 \div 4 = 10$ $4 \times 20 = 80$
 $68 \div 4$
 $80 \div 4 = 20$

68 is **between** 40 and 80.

So, the quotient is between **10** and **20**.

b $356 \div 4$ $4 \times 80 = 320$
 $320 \div 4 = 80$ $4 \times 90 = 360$
 $356 \div 4$
 $360 \div 4 = 90$

356 is **between** 320 and 360.

So, the quotient is between **80** and **90**.

c $752 \div 3$ $3 \times 200 = 600$
 $600 \div 3 = 200$ $3 \times 300 = 900$
 $752 \div 3$
 $900 \div 3 = 300$

752 is **between** 600 and 900.

So, the quotient is between **200** and **300**.

d $2,569 \div 3$ $3 \times 800 = 2,400$
 $2,400 \div 3 = 800$ $3 \times 900 = 2,700$
 $2,569 \div 3$
 $2,700 \div 3 = 900$

3,569 is **between** 2,400 and 2,700.

So, the quotient is between **800** and **900**.

Practice 1 Complete the following table:

Problem	The dividend is between	The quotient is between
Example: $45 \div 3$	30 and 60	10 and 20
a $75 \div 3$	 and	 and
b $845 \div 3$	 and	 and
c $215 \div 4$	 and	 and
d $4,256 \div 2$	 and	 and
e $5,487 \div 4$	 and	 and

The Standard Division Algorithm

Example: Divide: $98 \div 4$

First Step: Writing the problem:

$$4 \overline{) 98}$$

- The **dividend** is written **below** the line and the **divisor** is written to the **left** of the division symbol.

Second Step: Division:

Divide and Write Up

$$4 \overline{) 98} \begin{array}{r} 2 \\ \end{array}$$

- Start with the number in the place with the **highest value** (on the left). You know that: $9 \div 4 = 2$ and the remainder of the division is 1.
- Write **2** above the line, above **9**.
- The remainder of the division will not be recorded this time.

Third Step: Multiplication:

Multiply and Write Down

$$4 \overline{) 98} \begin{array}{r} 2 \\ 80 \\ \hline 18 \end{array}$$

- The **value** of 2 is 20 because it is in the **Tens** place.
- Multiply: $20 \times 4 = 80$, then write **80** below **98**.
- 80** is part of the **dividend** you divided.

Subtract and Bring
Down Next Digit

Fourth Step: Subtraction:

$$\begin{array}{r} 2 \\ 4 \overline{) 98} \\ - 80 \\ \hline 18 \end{array}$$

Subtract:

$$98 - 80 = 18$$

Write the result of the subtraction.

Divide and
Write Up

Fifth Step: Division:

$$\begin{array}{r} 24 \\ 4 \overline{) 98} \\ - 80 \\ \hline 18 \end{array}$$

- 18 is the new divisor.
- $18 \div 4 = 4$ and the remainder is 2.
- Write 4 over 8 in the Ones place.

Multiply and Write
Down

Sixth Step: Multiplication:

$$\begin{array}{r} 24 \\ 4 \overline{) 98} \\ - 80 \\ \hline 18 \\ 16 \\ \hline \end{array}$$

Multiply:

$4 \times 4 = 16$.
Write 16
under 18.

Subtract

Seventh Step: Subtraction:

$$\begin{array}{r} 24 \\ 4 \overline{) 98} \\ - 80 \\ \hline 18 \\ - 16 \\ \hline 2 \end{array}$$

Subtract:

$$18 - 16 = 2$$

So, $98 \div 4 = 24$ and the remainder is 2

NOTES

From the above:

- There are three basic steps:
(Division $\Rightarrow$ Multiplication $\Rightarrow$ Subtraction)
- These three steps are repeated
according to the number of digits of the dividend.

$$\begin{array}{r} \text{Quotient} \\ \downarrow \\ 24 \\ \text{Divisor} \rightarrow 4 \overline{) 98} \leftarrow \text{Dividend} \\ - 80 \\ \hline 18 \\ - 16 \\ \hline 2 \leftarrow \text{Remainder} \end{array}$$

Example: Divide: $858 \div 3$

First Step:
Writing the problem

$$3 \overline{) 858}$$

Second Step:
Division

$$\begin{array}{r} 2 \\ 3 \overline{) 858} \\ \underline{6} \\ 258 \end{array}$$

Third Step:
Multiplication

$$\begin{array}{r} \times 2 \\ 3 \overline{) 858} \\ \underline{600} \end{array}$$

Fourth Step:
Subtraction

$$\begin{array}{r} 2 \\ 3 \overline{) 858} \\ \underline{- 600} \\ 258 \end{array}$$

Fifth Step:
Division

$$\begin{array}{r} 28 \\ 3 \overline{) 858} \\ \underline{- 600} \\ 258 \end{array}$$

Sixth Step:
Multiplication

$$\begin{array}{r} \times 28 \\ 3 \overline{) 858} \\ \underline{- 600} \\ 258 \end{array}$$

Seventh Step:
Subtraction

$$\begin{array}{r} 28 \\ 3 \overline{) 858} \\ \underline{- 600} \\ 258 \\ \underline{- 240} \\ 18 \end{array}$$

Eighth Step:
Division

$$\begin{array}{r} 286 \\ 3 \overline{) 858} \\ \underline{- 600} \\ 258 \\ \underline{- 240} \\ 18 \end{array}$$

Ninth Step:
Multiplication

$$\begin{array}{r} \times 286 \\ 3 \overline{) 858} \\ \underline{- 600} \\ 258 \\ \underline{- 240} \\ 18 \end{array}$$

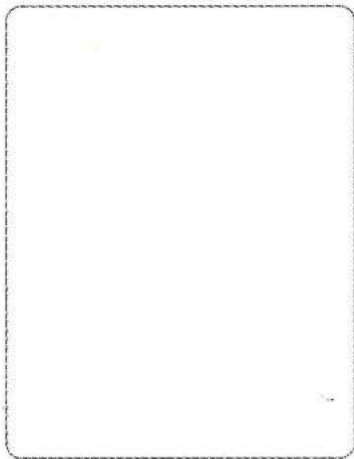
Tenth Step:
Subtraction

$$\begin{array}{r} 286 \\ 3 \overline{) 858} \\ \underline{- 600} \\ 258 \\ \underline{- 240} \\ 18 \\ \underline{- 18} \\ 0 \end{array}$$

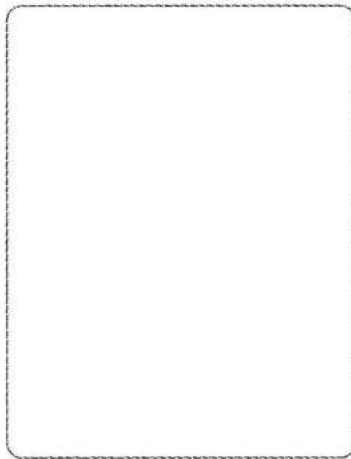
$$858 \div 3 = 286$$

Practice 2 Divide using the **standard division algorithm**:

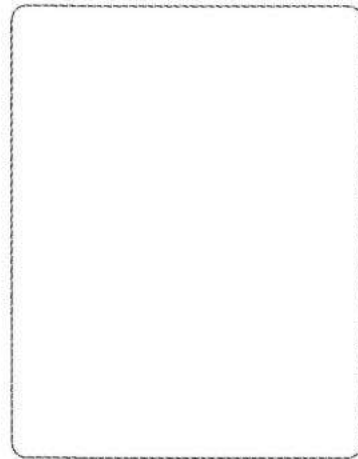
a $65 \div 5 = \dots\dots\dots$



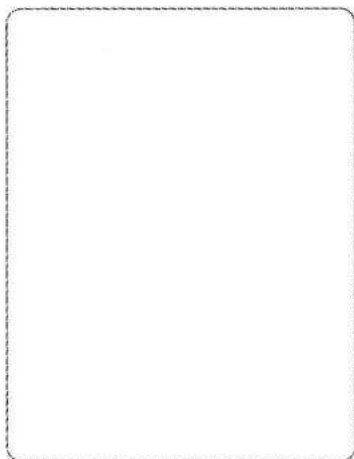
b $97 \div 4 = \dots\dots\dots$



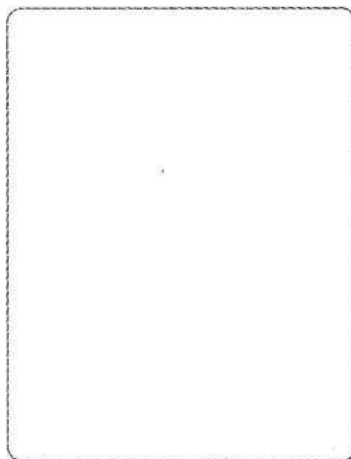
c $456 \div 3 = \dots\dots\dots$



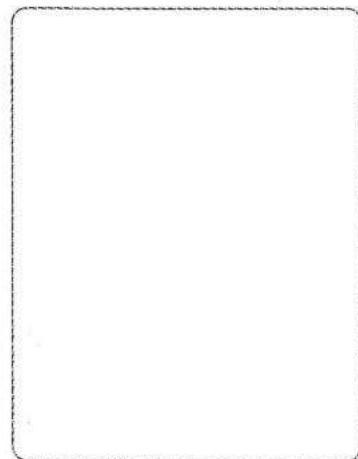
d $837 \div 6 = \dots\dots\dots$



e $8,457 \div 3 = \dots\dots\dots$

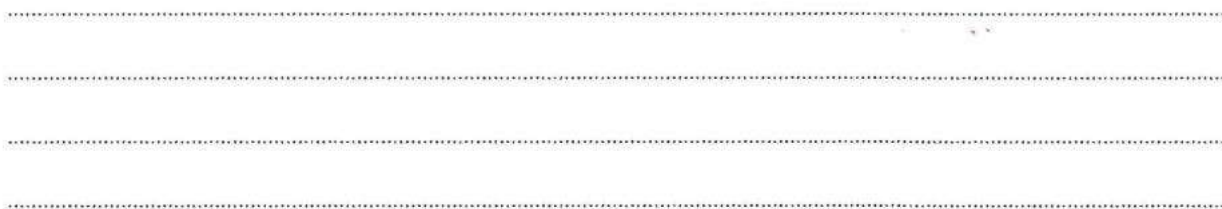


f $9,807 \div 3 = \dots\dots\dots$



Practice 3 The train has **784** passenger seats. If the train has **8** cars and each car has the same number of seats, how many passengers can be seated in each car?

(Solve the problem using at least **two different strategies**.)



Follow the Standard Division Algorithm

Example: Divide: $985 \div 4$:

(Using the standard division algorithm)

The quotient will be **between** 200 and 300.

Because the divisor is between 800 and 1,200.

- **Follow the division steps:**
Start by writing the problem, then (divide - multiply - subtract).
- These last three steps are **repeated** **according** to the **dividend**.

18 ÷ 4 = 4
Remainder 2

9 ÷ 4 = 2
Remainder 1

25 ÷ 4 = 6
Remainder 1

246

4 $\overline{) 985}$

4 x 200 → - 800

185

4 x 40 → - 160

25

4 x 6 → - 24

1

Check $246 \times 4 = 984$, $984 + 1 = 985$

Example: Divide: $296 \div 4$:

(Using the standard division algorithm)

The quotient will be **between** 0 and 100.

Because the divisor is between 0 and 400.

- **Note that:** When dividing $2 \div 4$, division is **not possible** because $2 < 4$.
So, we divide 2 and 9 together ($29 \div 4$).
- **Note that:** If the division is not possible, we **add** the number that cannot be divided to the next number.
- **Note that:** 0 is written **above** the number that cannot be divided.

29 ÷ 4 = 7
Remainder 1

2 ÷ 4
Not possible

16 ÷ 4 = 4

074

4 $\overline{) 296}$

4 x 70 → - 280

16

4 x 4 → - 16

0

Check $74 \times 4 = 296$

Example: Divide: $856 \div 8$:

(Using the standard division algorithm)

The quotient will be **between** 100 and 200.

Because the divisor is between 800 and 1,600.

- Note that:** When dividing $5 \div 8$, division is **not possible** because $5 < 8$.
So, we divide 5 and 6 together ($56 \div 8$).

Check $107 \times 8 = 856$

Diagram illustrating the standard division algorithm for $856 \div 8$:

Top row: $5 \div 8$ Not possible

Left side: $8 \div 8 = 1$

Right side: $56 \div 8 = 7$

Division steps:

$$\begin{array}{r} 8 \overline{) 856} \\ \underline{800} \\ 56 \\ \underline{56} \\ 0 \end{array}$$

Annotations:

- $8 \times 100 \rightarrow$ (pointing to the 100 in the quotient)
- $8 \times 7 \rightarrow$ (pointing to the 7 in the quotient)

- Note that:** The number of digits of the **quotient** may be **equal to** or **less than** the number of digits of the **dividend**.

Examples:

- $7,856 \div 5 \Rightarrow$ The number of digits of the quotient is **4** digits.
- $2,364 \div 5 \Rightarrow$ The number of digits of the quotient is **3** digits.

Because: $2 \div 5$ is not possible.

Practice 4 Complete the following table:

	Problem	Number of Digits of the Quotient	The Quotient is between	Using the Standard Division Algorithm
Example:	$452 \div 4$	3	100 and 200	$\begin{array}{r} 113 \\ 4 \overline{) 452} \\ \underline{400} \\ 52 \\ \underline{40} \\ 12 \\ \underline{12} \\ 0 \end{array}$

Example:	$278 \div 6$	2	0 and 100	$ \begin{array}{r} 046 \\ 6 \overline{) 278} \\ \underline{- 240} \\ 38 \\ \underline{- 36} \\ 2 \end{array} $
a	$845 \div 5$	.....	..... and	
b	$396 \div 6$	.....	..... and	
c	$4,256 \div 7$	.....	..... and	
d	$4,824 \div 8$	.....	..... and	

Practice 5

Estimate the **quotient** and determine the **number of digits of the quotient**, then solve each problem using the **standard division algorithm**:

a $576 \div 3 = \dots\dots\dots$

The number of digits of the quotient is $\dots\dots\dots$.

The quotient will be between $\dots\dots\dots$ and $\dots\dots\dots$.

b $558 \div 6 = \dots\dots\dots$

The number of digits of the quotient is $\dots\dots\dots$.

The quotient will be between $\dots\dots\dots$ and $\dots\dots\dots$.

Practice 6

Kazem wants to travel from Cairo to Alexandria. The distance between the two cities is **219 km**. Kazem plans to stop **3 times** during his journey. After how many kilometers should he stop?



10

1 Choose the correct answer:

- a If $108 \times 4 = 432$, then
 ($432 \div 4 = 108$ or $432 - 4 = 108$ or $432 \times 4 = 108$ or $432 \div 4 = 180$)
- b In the problem $135 \div 5$, the quotient is between
 (10 and 20 or 20 and 30 or 30 and 40 or 100 and 200)
- c $6,012 \div 3 =$
 (24 or 204 or 2,004 or 2,040)

2 Use the **standard division algorithm** to solve:

a $945 \div 4$



b $607 \div 8$



3 Use the **standard algorithm** to solve:

- a A teacher wants to divide the **315 students** participating in the school trip into **7 buses**.
 How many students will be in each bus?



- b Manal has **216 flower** plants that she wants to plant in 9 rows in her garden. How many plants does she put in each row?



Unit 8

Order of Operations

Concept 8.1

Order of Operations

Lessons 1&2

The Order of Operations and Story Problems

Learning Objectives:

By the end of these lessons, the student will be able to:

- Use the order of operations to solve problems with multiple operations.
- Write and solve an equation to represent what is happening in a multistep story problem.



1&2 Lessons

The Order of Operations and Story Problems

Order of Operations Diagram

Parentheses

Multiplication and Division
(From **left to right**)

Addition and Subtraction
(From **left to right**)

First: Problems that contain **addition** and **subtraction** only:

- When a problem contains only addition and subtraction, we perform the operations from **left to right**.

Example: $5 + 6 + 4$ $= 11 + 4$ $= 15$	Example: $9 - 6 - 2$ $= 3 - 2$ $= 1$	Example: $8 - 2 + 3$ $= 6 + 3$ $= 9$
---	---	---

Second: Problems that contain **multiplication** and **division** only:

- When a problem contains only multiplication and division, we perform the operations from **left to right**.

Example: $5 \times 2 \times 4$ $= 10 \times 4$ $= 40$	Example: $18 \div 2 \div 3$ $= 9 \div 3$ $= 3$	Example: $24 \div 8 \times 2$ $= 3 \times 2$ $= 6$
--	---	---

Practice 1

Follow the **order of operations** to solve the following problems:

a $12 + 2 + 8$

$=$

$=$

b $12 - 5 - 2$

$=$

$=$

c $9 + 8 - 2$

$=$

$=$

d $12 - 2 + 5$

$=$

$=$

e $24 \div 6 \div 4$

$=$

$=$

f $5 \times 6 \times 3$

$=$

$=$

g $9 \times 4 \div 6$

$=$

$=$

h $24 \div 8 \times 4$

$=$

$=$

i $15 \times 4 \div 3$

$=$

$=$

Third: ▶ Problems that contain **two different** operations:

- One of them is multiplication or division, and the other is addition or subtraction:
 - When a problem contains **more than one** operation, multiplication and division must be performed **before** addition and subtraction.

$5 + 3 \times 4$ $= 5 + 12$ $= 17$	$7 \times 2 + 4$ $= 14 + 4$ $= 18$	$9 \div 3 + 6$ $= 3 + 6$ $= 9$	$3 + 6 \div 3$ $= 3 + 2$ $= 5$
$9 - 4 \times 2$ $= 9 - 8$ $= 1$	$5 \times 3 - 7$ $= 15 - 7$ $= 8$	$8 \div 4 - 2$ $= 2 - 2$ $= 0$	$9 - 6 \div 2$ $= 9 - 3$ $= 6$

Practice 2 Follow the **order of operations** to solve the following problems:

a $32 \div 8 + 5$

=

=

b $5 + 20 \div 4$

=

=

c $6 + 6 \times 2$

=

=

d $16 \div 2 - 7$

=

=

e $16 - 8 \div 4$

=

=

f $8 - 2 \times 3$

=

=

g $2 \times 8 - 6$

=

=

h $6 + 5 - 3 - 2$

=

=

i $6 \times 5 \div 3 \div 2$

=

=

Fourth: Problems that contain **parentheses**:

- When a problem contains parentheses, the operation **inside** the **parentheses** is performed **first**
- If the parentheses contain **more than one** operation, **the order of operations is followed**

$\underbrace{(5 - 2)}_3 \times 4$ $= 3 \times 4$ $= 12$	$21 \div \underbrace{(9 - 2)}_7$ $= 21 \div 7$ $= 3$	$7 + \underbrace{(4 \times 5)}_{20}$ $= 7 + 20$ $= 27$
$\underbrace{(5 + 9)}_{14} \div \underbrace{(8 - 6)}_2$ $= 14 \div 2$ $= 7$	$4 \div \underbrace{(4 \times 6 - 20)}_{24 - 20}$ $= 4 \div (24 - 20)$ $= 4 \div 4$ $= 1$	

Practice 3 Follow the **order of operations** to solve the following problems:

a $4 \times (5 + 3)$

=

=

b $(16 \div 8) - 2$

=

=

c $(9 + 2) \times 4 \div 2$

=

=

d $(7 + 3) \times (15 - 8) =$

=

e $25 - (6 + 2 \times 7) =$

=

Fifth ▶ Problems with **more than one operation**:

- If the problem contains **more than one operation**, multiplication and division must be performed **before** addition and subtraction. Then, add and subtract from **left to right**.

Example: $30 \div 5 + 4 \times 7 + 2 \times 6$

$$= 6 + 28 + 12$$

$$= 34 + 12$$

$$= 46$$

Example: $3 \times 4 \times 5 + 40 \div 4 \div 2$

$$= 12 \times 5 + 10 \div 2$$

$$= 60 + 5$$

$$= 65$$

Practice 4 Follow the **order of operations** to solve the following problems:

a $2 + 4 \times 6$

=

=

b $48 \div 4 + 9$

=

=

c $6 \times (3 - 3) \times 5$

=

=

d $7 + 70 \div 10 - 2$

=

=

e $49 - 7 \times 6 + 4$

=

=

f $8 \times 2 + 24 - 12$

=

=

g $8 \times 3 + 6 \div 2$

=

=

h $21 \div (3 - 2) \times 3$

=

=

i $25 \div 5 + 30 \div 3$

=

=

Practice 5 Adel loves chocolate. He received **246 bars** of chocolate for his birthday. He ate **24 bars** and wants to give the rest to **6** of his friends. How many bars of chocolate would each friend have if he divided them equally?

.....

.....

Practice 6 Maha walked **14 kilometers** every day for **two weeks**. The third week, Maha walked **56 kilometers**. How many kilometers did she walk during those **three weeks**?

.....

.....

Practice 7 Ashraf should take the bus to go to work. It takes **27 minutes** to reach the bus stop near his workplace. After that, he has to walk for **12 minutes** from the bus stop to his workplace. How many minutes does Ashraf spend on his way to work during **5 days**?

.....

.....

Practice 8 A group of tourists is on a tour in Alexandria. The group includes **172 tourists** and **8 tour guides** who want to travel to visit the Pyramids by microbus. Each microbus can accommodate **9 people**. How many minibuses do they need so that everyone can reach the Pyramids?

.....

.....

Practice 9 Nashwa wants to bake blueberry pancakes. She will put **6 berries** in each pancake. Nashwa bought **198 berries** from the store. On her way home, Nashwa ate **18 berries**. How many pancakes can Nashwa bake with the remaining berries?

.....

.....

Practice 10

Write a story problem that can be represented by the following equation: $6 + 36 \div 4$.

Quiz?

10

1 Choose the correct answer:

a $5 \times 6 - 4 =$

(10 or 26 or 34 or 7)

b $9 - 5 - 3 =$

(11 or 17 or 1 or 7)

c $7 \times (2 + 3) - 4 =$

(7 or 13 or 15 or 31)

2 Follow the **standard order of operations** to solve:

a $18 \times 2 + 8 - 3$

b $73 - 60 + 15 \div 3$

c $34 - (6 + 10) \div 8$

3 Marwan saved **6 pounds** per day for **8 days**, and then **5 pounds** per day for **7 days**. What is the total amount of money that he saved in all days?

Unit 1

Lessons 1&2

Big Numbers

Changing Place Values

- 1 a Twenty seven million, two hundred fifty-four thousand, nine hundred eighty-five.
b One Milliard, three hundred ninety million, four hundred two thousand, six hundred fifty.
- 2 a 45,125,123 b 259,024,000
c 278,000,986 d 9,109,000,500
e 3,065,026,045 f 4,005,009,080
g 10,000,050,200 h 6,005,000,040
- 3 a Five million, two hundred fourteen thousand, three hundred twenty.
b Forty five million, one hundred fifty thousand, two hundred.
c Seven hundred fourteen million, fifty-eight thousand, nine.
d Four hundred five million, six thousand, forty-seven.
e Seven milliard, five hundred four million, six hundred thirty thousand, four hundred twelve.
f Three milliard, twenty-five million, forty thousand, seven.
g Nine milliard, five hundred thousand.
h Eight milliard, thirty million, twenty thousand.
- 4 a Ten Thousands , 20,000
b Millions , 9,000,000
c Tens , 0
d Hundred Thousands , 600,000
e Milliards , 8,000,000,000

- 5 a Hundred Thousands , 700,000
b Tens , 70
c Milliards , 7,000,000,000
d Ones , 7 e Millions , 7,000,000
f Hundred Millions , 700,000,000

- 6 a 8 b 2 c 6
- 7 a 8 b 9 c 2
- 8 a 300 b 70,000,000
c 4,000 d 6,000,000,000
e 70,000
- 9 a 5,000 b 8
c 500 d 600,000
e 500 f 80
g 90 h 6,000

10

The number of ants in each hill	7	12	28	92	156	1,786
The number of ants in all hills	70	120	280	920	1,560	17,860

Quiz

- 1 a Sixty million, twenty five thousand, seven hundred, three
b Ten Thousands c 0
- 2 a 40 b 823,686
c 7
- 3 a → 2 b → 4
c → 1 d → 3

Lessons 3&4

Many Forms to Write Numbers Composing and Decomposing

- 1 a Seventeen million, two hundred thousand, five hundred twenty-three.
b One hundred million, twenty thousand, forty-five.
c 20,100,459: Twenty million, one hundred thousand, four hundred fifty-nine.
d 7,000,050,200: Seven milliard (billion), fifty thousand, two hundred.
- 2 a 5,025,203 b 3,003,003,003
c 9,040,080,206 d 7,000,500,200
- 3 a $40,000,000 + 300,000 + 100 + 2$
b $7,000,000,000 + 80,000 + 6$
c $7,000,000,000 + 50,000 + 200$
d $100,000,000 + 50,000,000 + 20,000 + 9,000 + 300 + 10 + 6$
- 4 a 8,027,050,006
 $(8 \times 1,000,000,000) + (2 \times 10,000,000) + (7 \times 1,000,000) + (5 \times 10,000) + (6 \times 1)$
b 6,000,920,590
c 20,014,023
 $(2 \times 10,000,000) + (1 \times 10,000) + (4 \times 1,000) + (2 \times 10) + (3 \times 1)$
- 5 a 80,070,021 b 2,000,098,500
c 900,250,209
- 6 a $60,000,000 + 7,000,000 + 100,000 + 20,000 + 5,000 + 10 + 2$
b $7,000,000 + 20,000 + 4,000 + 600 + 50$
c $70,000,000 + 5,000,000 + 30,000 + 400 + 60$
- 7 a $(5 \times 1,000,000) + (2 \times 100,000) + (6 \times 10,000) + (4 \times 1,000) + (1 \times 100) + (1 \times 10) + 5$

- b $(1 \times 10,000,000) + (2 \times 100,000) + (5 \times 100) + (4 \times 10) + (8 \times 1)$
- c $(2 \times 1,000,000,000) + (2 \times 100,000) + (5 \times 10) + (7 \times 1)$

Quiz

- 1 a 700,126,450
b 33 millions, 25 thousands
c $(4 \times 10,000) + (5 \times 100) + (8 \times 1)$
- 2 a 50,030,600 b 8,000,008,000
c 7 Milliards
- 3 a 7,300,040,008
b $(7 \times 1,000,000,000) + (3 \times 100,000,000) + (4 \times 10,000) + (8 \times 1)$

Lessons 5-7

Comparing Big Numbers Comparing Numbers in Multiple Forms Descending and Ascending Numbers

- 1 a > b = c < d < e >
- 2 a 520,000, 502,000, 250,000, 205,000
b 643,205, 436,250, 364,250, 346,205
- 3 a 100,000, 900,900, 999,999, 9,000,000
b 78,090, 78,091, 78,999, 79,010, 79,100

4

	Standard Form	Order
a	3,010,002,050	3
b	3,100,020,005	4
c	3,001,200,500	2
d	3,100,200,100	5
e	3,001,002,005	1

Quiz

- 1 a 300,000 b 360,000 c 74,000
2 a 342,698 b 7,395 c 5 milliard
3 a 7,000 b 9,300

Unit 2

Lesson 1

Properties of Addition

- 1 a Commutative b Identity Element
c Associative d Commutative
e Identity Element f Associative
2 a 3, Commutative b 17, Commutative
c 5, Identity Element
d 0, Identity Element
e 3, Associative f 25, 20, Associative
3 a 88, Commutative, 36, Associative
= $100 + 36 = 136$
b 25, Commutative
= $(10 + 45) + (25 + 75)$, Associative
= $55 + 100 = 155$
c $(15 + 0)$, Associative $(15 + 25) = 40$, Identity

Quiz

- 1 a Associative b Commutative
c Additive Identity
2 a 24 b 0 c 4
3 a $78 + 22 + 45$ "Commutative Property"
= $(78 + 22) + 45$ "Associative Property"
= $100 + 45 = 145$
b $5 + 8 + 7 + 3$ "Commutative Property"
= $(5 + 8) + (7 + 3)$ "Associative Property"
= $13 + 10 = 23$

5

	Standard Form	Order
a	4,000,060,007	3
b	4,000,600,070	2
c	4,000,600,700	1
d	4,000,006,700	4
e	4,000,006,070	5

Quiz

- 1 a = b > c >
2 a 1,000,000,000 b $3 \times 1,000$
c 10,000
3 a (1) 783,568, 785,368, 786,385, 788,635
(2) 788,635, 786,385, 785,368, 783,568
b (1) 500,005, 500,500, 505,000, 550,000
(2) 550,000, 505,000, 500,500, 500,005

Lesson 8

Rounding Rules

First: The Midpoint Strategy:

- 1 a 240 b 100
2 a 300 b 7,400
3 a 5,000 b 11,000
4 a 9,000,000 b 23,000,000

Second: Rounding Rule:

- 5 a 260 b 370 c 70
d 100 e 12,260 f 123,990
6 a 800 b 6,900 c 71,900
d 1,000 e 30,000 f 1,500
7 a 16,000 b 90,000
c 1,000,000 d 453,000,000
e 669,460,000 f 6,000,000,000

Guide Answers

Lesson 2

Addition with Regrouping

- 1 a 89,900 b 9,030,290
c 10,000,000 d 11,110
e 1,000,005 f 1,010,511,000
- 2 a 14,102, 14,100 (✓), 14,100 (✓), 14,000 (X).
b 9,872, 9,870 (✓), 9,900 (X), 10,000 (X).
- 3 Estimation: $140 + 170 = 310$.
Actual Answer: $142 + 165 = 307$. (Reasonable)
- 4 Estimation: $400 + 500 = 900$.
Actual Answer: $383 + 462 = 845$.
- 5 Estimation: $2,000 + 2,000 = 4,000$.
Actual Answer: $2,420 + 2,420 = 4,840$.

Quiz

- 1 a 80,600 b 101,000 c 840
- 2 a 7,000 b =
- c $14,000 + 71$
- 3 $13,450 + 1,690 = 15,140$ pounds
- 4 $46,000 + 20,400 = 66,400$

Lesson 3

Subtraction with Regrouping

- 1 a 19,183 b 936,250
c 4,153,045 d 31,242
e 5 f 530,836,451
- 2 a 13,299, 13,290 (✓), 13,300 (X), 13,000 (X)
b 9,053, 9,050 (✓), 9,000 (X), 9,000 (X)
- 3 $15,422,140 - 6,350,300 = 9,071,840$ ants
 $15,000,000 - 6,000,000 = 9,000,000$ ants
- 4 $255,000 - 56,200 = 198,800$ ants

- 5 $3,548 - 1,672 = 1,876$ cm
- 6 $3,452 - 1,267 = 2,185$ ants

Quiz

- 1 a 82,098 b 75,145 c 9,000,001
- 2 a 71,900 b <
c $39,000 + 1$
- 3 $15,620 - 7,550 = 8,070$ pounds
- 4 $18,880 - 9,500 = 9,380$

Lessons 4&5

Bar Models, Variables, and Story Problems – Solving Multistep Story Problems with Addition and Subtraction

- 1 a Solution: $x = 7,120 - 5,200$
 $x = 1,920$

7,120
x 5,200
- b Solution: $y = 22,120 + 18,850$
 $y = 40,970$

y
22,120 18,850
- c Solution: $z = 6,000 - 812$
 $z = 5,188$

6,000
812 z
- d Solution: $w = 7,600 - 4,455$
 $w = 3,145$

7,600
w 4,455
- 2 a Equation: $x = 8,500 - 6,250$
Solution: $x = 2,250$

8,500
x 6,250
- b Equation: $x = 2,050 - 985$
Solution: $x = 1,065$

2,050
x 985
- c Equation: $y = 4,200 - 3,350$
Solution: $y = 850$

4,200
y 3,350
- d Equation: $a = 90,950 + 750,500$
Solution: $a = 841,450$

a
90,950 750,500
- 3 $1,075 + 1,120 + 1,325 = 3,520$
 $6,853 - 3,520 = 3,333$

4 $59,000 + 27,525 + 32,975 = 119,500$

$150,000 - 119,500 = 30,500$

5 $320,000 + 200,000 = 520,000$

$520,000 - 420,195 = 99,805$

Quiz

1 a $n = 8,000$

b $c = 420$

c $m = 74$

2 a 65

b

	15
x	7

c $20 + m = 40$

3 $900 - x = 650$, $x = 900 - 650 = 250$ pounds

Unit 3

Lesson 1

Measuring Length

1 a Centimeters

b Kilometers

c Millimeters

d Kilometers

e Meters

2 a 5,000

b 900

c 50

6

2

9

20,000

30

70

35

40,000

600

3 a 840 cm

b 5,020 cm

c 7,070 m

d 15,120 m

e 3 m, 72 cm

f 10 m, 5 cm

g 9 km, 300 m

h 70 km, 20 m

4 a 5,400 cm

b 23,000 cm

c 23,000 m

d 600,000 m

e 7,000 m

f 860 m

g 9,000 km

h 430 km

5 a 625 cm

b 9,032 cm

c 4,138 m

d 14,225 m

e 4 m, 25 cm

f 20 m, 3 cm

g 7 km, 529 m

h 900 m, 50 cm

6 $100,000 \text{ cm} = 1,000 \text{ m} = 1 \text{ km}$.

7 $15 \text{ dm} = 1,500 \text{ mm}$

8 $500 \div 50 = 10$ minutes.

$50 \times 30 = 1,500 \text{ m}$

9 $7,000 - 5,000 = 2,000 \text{ m}$

Quiz

1 a 42,000

b 200

c $50 \text{ km} + 20 \text{ m}$

d 2,109

2 a Meters

b Kilometers

c Centimeters

d Millimeters

3 $3 \text{ km} = 3,000 \text{ m} = 30,000 \text{ dm} = 300,000 \text{ cm}$

Lesson 2

Measuring Mass

1 a Kilograms

b Grams

c Grams

d Kilograms

2 a Gram Kilogram

b Gram Kilogram

2,000 2

9,000 9

15,000 15

5,000 5

61,000 61

12,000 12

3 a 9,105 grams.

b 32,008 grams.

c 8 ton, 235 kg

d 41 ton, 623 kg

4 a 6,000 g

b 20,000 g

c 90 kg

d 200 kg

e 3 kg 624 g

f 67 kg 26 g

g 5,583 g

h 50,009 g

5 45,200 grams

6 $5 \text{ kg} = 5,000 \text{ g}$, $7 \text{ kg} = 7,000 \text{ g}$.

The sum = $5,000 + 500 + 7,000 = 12,500 \text{ g}$.

Guide Answers

Quiz

- a 42,000 b 50

c 10 kg + 70 g
- a kilogram b 30,005

c >
- 8,700 - 5,300 = 3,400 g

Lesson 3

Units of Capacity

- | | |
|-------------|---------|
| a 50,000 | b 8,000 |
| 200 | 7 |
| 520,000,000 | 18,000 |
- a 35,020 mm b 9,252 milliliters

c 3 liters 22 milliliters

d 200 liters 200 milliliters
- a 10,547 b 9,700

c 17,255 d 20,050
- a 3,000 milliliters b 50,000 milliliters

c 700 liters d 15 liters

e 7 liters 320 milliliters

f 30 liters 25 milliliters

g 11,011 milliliters

h 10,002 milliliters
- 45 liters = 45,000 milliliters

30 liters, 250 milliliters = 30,250 milliliters

The amount of gasoline = 45,000 - 30,250

= 14,750 milliliters
- 2,500 milliliters, 1,250 milliliters

The amount of juice = 2,500 + 1,250

= 3,750 milliliters
- 2 liters = 2,000 milliliters

The amount of soda water = 2,000 - (230 + 250)

= 2,000 - 480

= 1,520 milliliters

Quiz

- a 20,020 b 50,010

c 43,260 mL
- a 50,005 b 10

c >
- 2,000 ÷ 200 = 10 bottles
- 6,000 - 4,200 = 1,800 mL.

Lessons 4&5

Units of Time – Elapsed Time

- Answer by yourself.
- a 7, 21, 35, 49, 63

b 24, 96, 144, 192, 240

c 60, 120, 300, 480, 600

d 60, 180, 360, 420, 540
- a 16 b 178

c 87 d 130

e 335 f 650

g 305
- a 6,3 b 2,2

c 5,10 d 2,30

e 5,30 f 1,30

g 10,5
- 3 + 4 = 7 days.

7 days = 168 hours.
- 3 + 2 + 4 = 9 hours.

9 hours = 540 minutes.
- a 9:00 b 8:10

c 6:42 d 4:33

e 9:50 f 6:27
- 8:45 + 1:25 = 9:70

= 10:10
- 3:30 + 2:45 = 5:75

= 6:15

10 $1:22 + 2:12 + 1:57 = 4:91$
 $= 5:31$

(No, they don't have time.)

Quiz

- 1 a 9 b 51
 c 305 d 2 weeks and 4 days
 e 1 day and 6 hours
 f 2 hours and 30 minutes
- 2 a 9:00 b 1:30
- 3 $8:30 - 6:20 = 2:10$

Lessons 6&7

Applications of Measurements 1&2

- 1 Weight of potatoes and onions:

• $2,950 - 1,075 = 1,875$ g
 • $2,950 + 1,875 = 4,825$ g

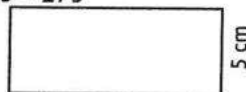
- 2 12 weeks = 84 days.

The difference = $84 - 45 = 39$ days.

- 3 20,000 mL = 20 L

$100 - 20 = 80$ L

- 4 $8,000 + 10,000 + 500 + 225 + 275 = 19,000$ g = 19 kg



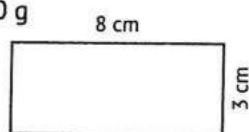
- 5 $12 + 3 = 4$ m = 400 cm

- 6 $4 \times 500 = 2,000$ mL
 $= 2$ L

$2 \times 7 = 14$ L

- 7 $5 \times 500 = 2,500$ g

$100,000 + 2,500 = 102,500$ g

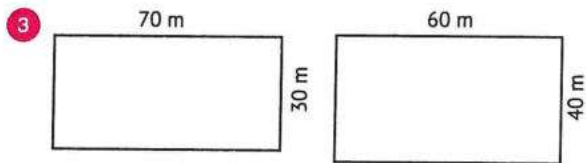


Unit 4

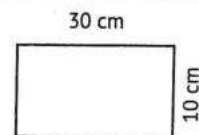
Lesson 1

Finding Perimeter

- 1 a 26 cm b 78 cm c 100 cm
 2 a 140 cm b 32 m c 6 m



- 4 $P = 20 \times 4$
 $= 80$ cm



- 5 a $S \times 4$ b $(L + W) \times 2$
 c $7 \times 4 = 28$ m d $(8 + 6) \times 2 = 28$ cm
 e $(50 + 30) \times 2 = 160$ m

Quiz

- 1 a 44 b 32
 c $L \times 2 + W \times 2$
- 2 a 4 cm, 2 cm b $P = L + W + L + W$
 c 24
- 4 $P = 6 \times 4 = 24$ cm

Lesson 2

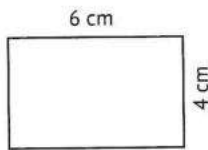
Finding Area

- 1 a 40 cm^2 b 250 cm^2 c 400 cm^2
- 2 $8 \times 6 = 48 \text{ m}^2$ 3 $9 \times 9 = 81 \text{ m}^2$
- 4 Area = $12 \times 2 = 24 \text{ m}^2$
 $P = (12 + 2) \times 2 = 28$ m
- 5 $P = (8 + 3) \times 2$
 $= 22$ cm

Guide Answers

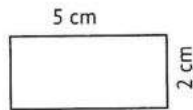
$$P = (6 + 4) \times 2$$

$$= 20 \text{ cm}$$



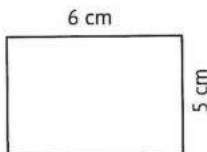
$$P = (5 + 2) \times 2$$

$$= 14 \text{ cm}$$



$$A = 5 \times 2$$

$$= 10 \text{ cm}^2$$



$$P = (6 + 5) \times 2$$

$$= 22 \text{ cm}$$

$$8 \text{ a } A = S \times S \quad \text{b } A = L \times W \quad \text{c } 160 \quad \text{d } 64 \quad \text{e } 36$$

Quiz

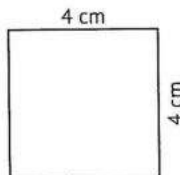
$$1 \text{ a } 28 \quad \text{b } 36$$

$$\text{c } L \times W$$

$$2 \text{ a } 4 \text{ cm}, 3 \text{ cm} \quad \text{b } A = S \times S$$

$$\text{c } 64$$

$$3 \text{ a } 8 \times 2 = 16 \text{ sq. cm}$$



Lesson 3

Unknown Dimensions

$$1 \text{ a } 34 \text{ cm}, 70 \text{ cm}^2 \quad \text{b } 9 \text{ m}, 54 \text{ m}^2$$

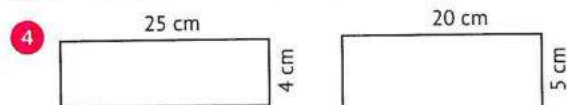
$$\text{c } 8 \text{ mm}, 96 \text{ mm}^2 \quad \text{d } 9 \text{ cm}, 26 \text{ cm}$$

$$\text{e } 6 \text{ dm}, 28 \text{ dm}$$

$$2 \text{ a } 24 \text{ cm}, 36 \text{ cm}^2 \quad \text{b } 7 \text{ m}, 49 \text{ m}^2$$

$$\text{c } 8 \text{ mm}, 32 \text{ mm}$$

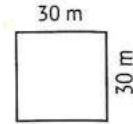
$$3 \text{ a } P = 40 \text{ cm} \quad \text{b } A = 70 \text{ cm}^2$$



$$5 \text{ a } \frac{1}{2} P = 60 \text{ m}$$

$$L = 60 - 30$$

$$= 30 \text{ m}$$



Quiz

$$1 \text{ a } 28 \div 4 = 7 \text{ cm} \quad \text{b } 50 \div 10 = 5 \text{ cm}$$

$$\text{c } 5 \text{ cm}$$

$$2 \text{ a } (26 \div 2) - 5 = 8 \text{ cm}$$

$$\text{b } (44 \div 2) - 15 = 7 \text{ cm}$$

$$\text{c } 20 \div 4 = 5 \text{ cm}$$

$$3 \text{ a } w = (60 \div 2) - 20 = 10 \text{ cm},$$

$$A = 20 \times 10 = 200 \text{ Sq. cm}$$

Lesson 4

Complex Shapes

$$1 \text{ a } P = 25 + 18 + 8 + 10 + 17 + 8 = 86 \text{ cm}$$

$$A = (25 \times 8) + (10 \times 8) = 200 + 80$$

$$= 280 \text{ sq. cm}$$

$$2 \text{ a } P = 30 + 8 + 15 + 12 + 7 + 12 + 8 + 8 = 100 \text{ cm}$$

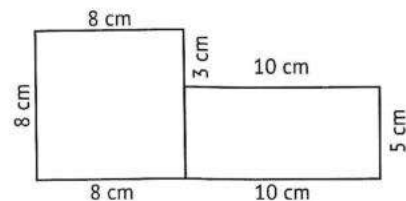
$$A = (30 \times 8) + (12 \times 7) = 240 + 84$$

$$= 324 \text{ sq. cm}$$

$$3 \text{ a } A = (8 \times 8) + (10 \times 5) = 64 + 50$$

$$= 114 \text{ sq. cm}$$

$$P = 8 + 8 + 8 + 10 + 5 + 10 + 3 = 52 \text{ cm}$$



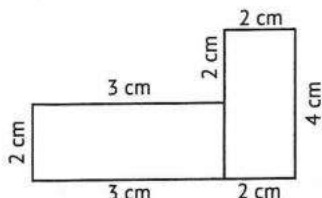
Quiz

$$1 \text{ a } A = 4 \times 2 + 3 \times y = 35$$

$$A = (9 \times 3) + (4 \times 2) = 27 + 8 = 35 \text{ sq. cm}$$

$$2 \text{ a } A = 1 \times 3 + 4 \times 8 = 35 \text{ cm}^2$$

- 3 $P = 4 + 2 + 3 + 2 + 3 + 2 + 2 = 18 \text{ cm}$
 $A = (4 \times 2) + (3 \times 2) = 8 + 6 = 14 \text{ sq. cm}$



Unit 5

Lessons 1-3

Multiplicative Comparison

Creating Multiplicative Comparison Equations

Solving Multiplicative Comparison Equations

- 1 **a** $4 \times 7 = X$ **b** $4 \times 3 = y$
c $k = 2 \times 7$ **d** $z = 6 \times 3$
e $24 = 3 \times y$ **f** $48 = 8 \times n$
g $21 = 3 \times a$ **h** $36 = m \times 9$
- 2 **a** $X = 5 \times 4 = 20$
b $12 = 3 \times a / \text{number of pieces} = 4$
c $21 = y \times 7 / \text{number of times} = 3$
d $X = 2 \times 4 / \text{number of times} = 8$
e $18 = 6 \times m / \text{number of times} = 3$
- 3 **a** $X = 8 \times 4$, $X = 32$
b $y = 6 \times 5$, $y = 30$
c $m = 9 \times 2$, $m = 18$
d $18 = 6 \times a$, $a = 18 \div 6 = 3$
e $36 = 4 \times b$, $b = 36 \div 4 = 9$
f $42 = 7 \times n$, $n = 42 \div 7 = 6$

- 4 **a** $15 = 3 \times a$, $a = 15 \div 3 = 5$
b $b = 5 \times 3$, $b = 15$
c $20 = 5 \times a$, $a = 20 \div 5 = 4$
d $24 = 3 \times y$, $y = 24 \div 3 = 8$

Quiz

- 1 **a** 9 **b** $6 \times 3 = 18$ **c** 28
2 **a** 3 **b** 9 **c** $a \times 3 = 15$
3 $a = 3 \times 7 = 21 \text{ pounds}$

Lessons 4&5

Commutative Property of Multiplication Identity Property and the Zero Property

- 1 **a** 7 **b** 6 **c** 6 **d** 9
2 **a** 8 **b** 10 **c** 6 **d** 8
3 $5 \times 6 = 6 \times 5$
4 $5 \times 8 = 8 \times 5$ or $4 \times 10 = 10 \times 4$
5 **a** 0 **b** 0 **c** 1
d 9 **e** 7 **f** 1
6 **a** 80 **b** 900 **c** 6,000
d 120 **e** 2,000 **f** 30,000
7 **a** 10 **b** 1,000 **c** 100
d 100 **e** 10 **f** 10

Quiz

- 1 **a** 7 **b** 2,000
c 0 **d** 100
2 **a** 5 **b** 1,000
c 1 **d** 0
3 $90 \times 10 = 900 \text{ pounds}$

Lessons 6&7

Associative Property of Multiplication Applying Patterns in Multiplication

- 1 a $(5 \times 3) \times 2 = 15 \times 2 = 30$
b $(3 \times 4) \times 2 = 12 \times 2 = 24$
c $2 \times (5 \times 4) = 2 \times 20 = 40$
d $10 \times (6 \times 5) = 10 \times 30 = 300$
- 2 a 3,5 b 3,4 c 7,9 d 7,2
- 3 $6 \times 2 \times 3 = 6 \times (2 \times 3) = 6 \times 6 = 36$ eggs.
- 4 $4 \times 2 \times 5 = 4 \times (2 \times 5) = 4 \times 10 = 40$ bottles.
- 5 a 10 b 100 c 8 d 5 e 60
- 6 a 240 b 240 c 4,000
d 6,300 e 40,000 f 42,000

Quiz

- 1 a 2, 6 b 10
c 12,000 d 500, 9
- 2 a 7 b 100
c > d <
- 3 $(2 \times 5 \times 3)$
 $10 \times 3 = 30$ flowers.

Unit 6

Lessons 1&2

Identifying Factors of Whole Numbers Prime and Composite Numbers

- 1 a 1, 2, 3, 4, 6, 12 b 1, 2, 4, 5, 8, 10, 20, 40
c 1, 2, 3, 4, 6, 9, 12, 18, 36
- 2 a 1, 5, 25 b 1, 2, 3, 4, 6, 8, 12, 16, 24, 48
c 1, 19
- 3 10, 20, 30
- 4 a 5 b 2, 5, 10 c 2
d 5 e 2
- 5 a 3, 5 b 2, 3, 6, 9
c 2, 5 d 2, 3, 6, 9
e 2, 5 f 3, 9
- 6 a 1, 2, 7, 14 (Composite Number)
b 1, 2, 23, 46 (Composite Number)
c 1, 2, 11, 22 (Composite Number)
d 1, 59 (Prime Number)
e 1, 2, 5, 10, 25, 50 (Composite Number)
f 1, 29 (Prime Number)
- 7 a 28 b 48
c 35

Quiz

- 1 a prime number b 23, 29
c odd, 2
- 2 a 2 b 5
c 20
- 3 a 1, 2, 3, 6, 9, 18 b 1, 2, 4, 5, 10, 20

Lesson 3

Greatest Common Factor (GCF)

- 1 a 4 b 10
c 7 d 1
- 2 Largest number of groups = (GCF) = 9
Number of boys in each group
= $27 \div 9 = 3$ boys.
Number of girls in each group = $36 \div 9 = 4$ girls.
- 3 Number of snacks
(GCF) = 12
Number of apples in each
package = $24 \div 12 = 2$ apples.
Number of candy in each
package = $36 \div 12 = 3$ candies.

Quiz

- 1 a 2 b 6
c 1
- 2 a 1,2,7,14 b 1,5,7,35
c 1, 7 d 7
- 3 a 5 b $10 \div 5 = 2$ pencils
c $15 \div 5 = 3$ erasers

Lessons 4-6

Identifying Multiples of Whole Numbers Common Multiples

Relationships Between Factors and Multiples

- 1 0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30,
32, 34, 36, 38, 40.
- 2 0, 5, 10, 15, 20, 25, 30, 35, 40.
- 3 a 4, 8, 12, 16, 20, 24, 28, 32, 36, 40, 44, 48, 52, 56,
60, 64, 68, 72, 76, 80, 84, 88, 92, 96, 100

b 10, 20, 30, 40, 50, 60, 70, 80, 90, 100

4 a 0, 16, 32, 40, 56, 64, 72, 80

b 0, 6, 12, 18, 24, 30, 36, 42, 48, 54, 60

c 0, 7, 14, 21, 28 d 27, 54, 99, 36, 45

5 0, 6, 12, 18

6 0, 12, 24

7 a 8, 16

b 10, 20

c 24, 48

d 42, 84

8 a 40, 50, 60, 70

b 48, 60, 72, 84

c 72, 96, 120

9 a 35, 5, 7, 5, 7, 35 b $48 = 6 \times 8, 8, 8, 48$

c 24

d 27

e 2 and 3 are factors of 6 or 6 is a multiple of 2 and 3

Quiz

- 1 a 6, 12, 18, 24, 30
b 24, 48 c 2 and 4 are factors of 8
- 2 a 16 b 24
c multiple
- 3 a 0, 4, 8, 12, 16, 20, 24, 28
b 0, 6, 12, 18, 24, 30
c 0, 12, 24

Unit 7

Lesson 1

The Area Model Strategy

- 1 a 64 b 84
- 2 a 120 b 522
- c 268 d 686
- 3 702
- 4 19

Quiz

- 1 a 175 b 332
- 2 a $4 \times 27 = 108$ b $9 \times 53 = 477$
- 3 $4 \times 67 = 268$

Lesson 2

The Distributive Property

- 1 a 128 b 2,244
- c 47,106 d 10,748
- 2 a 3,000 b 1,944
- c 19,425 d 39,696
- 3 980 cm.

Quiz

- 1 a 80,9 b $6 \times (500 + 30 + 7)$
- c $30 + 4$
- 2 a $(3 \times 60) + (3 \times 7) = 180 + 21 = 201$
- b $(8 \times 400) + (8 \times 3) = 3,200 + 24 = 3,224$
- c $(4 \times 200) + (4 \times 40) + (4 \times 7)$
 $= 800 + 160 + 28$
 988
- 3 $8 \times 890 = 8 \times (800 + 90) = 8 \times 800 + 8 \times 90$
 $= 64,000 + 720 = 7,120$ piasters

$$\begin{aligned} 4 \quad & (6 \times 800) + (6 \times 40) + (6 \times 3) \\ & = 4,800 + 240 + 18 = 5,058 \end{aligned}$$

Lessons 3&4

The Partial Products Algorithm Multiply by a 1-Digit Number

- 1 a 2,048 b 23,916
- c 567 d 5,616
- e 500 f 76,185
- 2 a 1,200 , 1,422 , 1,422
- b 63,000 , 66,825 , 66,825
- 3 a 336 b 1,944
- c 29,232 d 216
- e 1,192 f 39,330

Quiz

- 1 a 6,308 b = c 38×4
- 2 a 116 b 1,035
- 3 a 3,675 b 3,150
- 4 $24 \times 9 = 216$ hours

Lesson 5

Multiply a 2-Digit Number by a Multiple of 10

- 1 a 960 b 2,960
- 2 a 2,800 b 5,740
- 3 a 7,650 b 810
- 4 a 450 b 700
- c 840 d 2,400

Quiz

- 1 a 960 b 3,000 c >
- 2 a 1,080 b 920
- 3 a $(80 \times 20) + (80 \times 5) = 1,600 + 400 = 2,000$

b $(20 \times 60) + (20 \times 8) = 1,200 + 160 = 1,360$

4 $30 \times 24 = 720$ days

Lessons 6&7

Exploring Remainders

Patterns in Division

- 1 a 25, 4, 6, 1 b 30, 6, 5, 0
c 28, 5, 5, 3 d 16, 5, 3, 1
e 15, 2, 7, 1

2 $60 \div 40 = 1$ R 20

Number of buses = 2.

Number of empty seats

= $40 - 20 = 20$.

3 $48 \div 5 = 9$ R 3

Number of boxes = 10 boxes.

4 a $9 \div 3 = 3, 3,000$ b $15 \div 5 = 3, 3,000$

c $28 \div 4 = 7, 7,000$ d $30 \div 5 = 6, 600$

5 a 300 b 500

c 2,000 d 500

6 $9 \times 90 = 810$.

All workers can't ride the same metro.

7 $360 \div 6 = 60$ patties.

8 $180 \div 6 = 30$ boxes.

Quiz

- 1 a 8 b 3,000 c <
2 a 80 b 4,200 c 3
3 $2,100 \div 7 = 300$ weeks
4 $180 \div 6 = 30$ pens

Lesson 8

The Area Model and Division

- 1 a 14 b 22 R2.
c 152 R1. b 400

2 $864 \div 8 = 108$

3 $492 \div 4 = 123$ cars.

Quiz

- 1 a $315 \div 3$ b third model
c 24 (R2)

2 a 22 R 1 b 129 R 1

3 $2,135 \div 7 = 305$ pounds

4 $824 \div 8 = 103$ meters

Lesson 9

The Partial Quotients Algorithm

- 1 a 16 R3 b 28
c 125 d 234 R1
e 2,312 f 2,092 R2

2 $480 \div 3 = 160$ cups.

Quiz

- 1 a $78 \div 6$ b third model
c 17 R 3
2 a $345 \div 5 = 69$ students
b $72 \div 6 = 12$ pounds

Lessons 10&11

The Standard Division Algorithm Division and Multiplication

- 1 a 60, 90 - 20, 30
b 600, 900 - 200, 300
c 200, 400 - 50, 100
d 4,000, 8,000 - 1,000, 2,000

Guide Answers

- 2 a 13 b 24 R1
c 152 d 139 R3
e 2,819 f 3,269
- 3 $784 \div 8 = 98$ passengers.
- 4 a 3, 100 and 200, 169
b 2, 0 and 100, 66
c 3, 0 and 1,000, 608
d 3, 0 and 1,000, 603
- 5 a 3, 100 and 200
b 2, 0 and 100
- 6 $219 \div 3 = 73$ km.

Quiz

- 1 a $432 \div 4 = 108$ b 20 and 30
c 2,004
- 2 a 236 R 1 b 75 R 7
- 3 a $315 \div 7 = 45$ students
b $216 \div 9 = 24$ plants

Unit 8

Lessons 1-4

The Order of Operations and Story Problems

- 1 a 22 b 5 c 15
d 15 e 1 f 90
g 6 h 12 i 20
- 2 a 9 b 10 c 18
d 1 e 14 f 2
g 10 h 6 i 5
- 3 a 32 b 0 c 22

- d 70 e 5
- 4 a 26 b 21 c 0
d 12 e 11 f 28
g 27 h 63 i 15
- 5 $246 - 24 = 222$ bars.
 $222 \div 6 = 37$ bars.
- 6 $14 \times 14 = 196$ km.
 $196 + 56 = 252$ km.
- 8 $27 + 12 = 39$ minutes.
 $5 \times 39 = 195$ minutes.
- 7 $172 + 8 = 180$ persons
 $180 \div 9 = 20$ microbuses.
- 8 $198 - 18 = 180$ berries.
 $180 \div 6 = 30$ pancakes.
- 9 & 10 Answer by yourself.

Quiz

- 1 a 26 b 1
c 31
- 2 a $36 + 8 - 3 = 44 - 3 = 41$
b $73 - 60 + 5 = 13 + 5 = 18$
c $34 - 16 \div 8 = 34 - 2 = 32$
- 3 $6 \times 8 + 5 \times 7 = 48 + 35 = 83$

PONY

2026

MATH

Exercises Book



4

Primary
First Term

By Mohamed Nasreldin

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Theme

1

Unit

1

Place Value

Concept 1.1: Reinforcing Place Value

Concept 1.2: Using Place Value

Number Sense and Operations

Unit

2

Addition and Subtraction Strategies

Concept 2.1: Using Addition and
Subtraction Strategies

Concept 2.2: Solving Multistep
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Theme Units

Unit

3

Concepts of Measurement

Concept 3.1: Metric Measurement

Concept 3.2: Measuring Time

Unit

4

Area and Perimeter

Concept 4.1: Explore Area and
Perimeter

Unit¹ Place Value

Concept 1.1 Reinforcing Place Value

Lessons 1&2

1 Use the following **place value table** to read the shown number:

a

Milliards	Millions			Thousands			Ones		
Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones
			8	1	0	4	2	8	8

– The previous number is read as:

.....

.....

b

Milliards	Millions			Thousands			Ones		
Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones
		4	3	1	8	0	0	0	5

– The previous number is read as:

.....

.....

c

Milliards	Millions			Thousands			Ones		
Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones
	5	1	8	1	2	9	2	0	8

– The previous number is read as:

.....

.....

d

Milliards	Millions			Thousands			Ones		
Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones
5	0	0	2	4	0	3	7	5	0

- The previous number is read as:

.....

.....

e

Milliards	Millions			Thousands			Ones		
Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones
7	3	6	5	4	2	9	9	6	8

- The previous number is read as:

.....

.....

2 Write the following numbers in standard form:

- a Three hundred forty-five million, nine hundred sixty-five thousand, seven hundred twenty-eight (.....)
- b Five milliard, two hundred sixteen million, one hundred ninety thousand, seven hundred thirty-one (.....)
- c Two hundred fifty million, three hundred sixty thousand, nine hundred eighty (.....)
- d Six hundred two million, four hundred nine thousand, three hundred eight (.....)
- e Sixty-two million, forty-nine thousand, thirty-eight (.....)
- f Nine milliard, nine million, two thousand, two (.....)
- g Seven milliard, four hundred twenty-six thousand, two hundred fifty-one (.....)

h Eight milliard, five hundred sixteen million, two hundred fifty-nine

(.....)

i One million, five thousand, six

(.....)

j Thirty million, forty thousand, eighty

(.....)

k Five hundred million, two hundred thousand

(.....)

l Seventeen million, sixteen

(.....)

m Nine milliard, two thousand

(.....)

n Ten million, ten

(.....)

o Four milliard, four hundred million

(.....)

3 Write the following numbers in word form:

a 6,248,124:

.....

.....

b 21,650,230:

.....

.....

c 40,200,047:

.....

.....

d 615,340,201:

.....

.....

e 19,190,109:

.....

.....

f 6,025,140,800:

.....

.....

g 3,120,005,012:

h 9,002,004,003:

i 52,000,000:

j 120,000,000:

k 20,000,007:

l 500,002,070:

m 3,000,250,000:

n 3,800,050,009:

o 9,000,000,000:

p 1,000,250,060:

- 4 Write the **place value** and **value** of the underlined digit of the following numbers:

	Number	Place Value	Value
a	7,654,328, <u>6</u> 38	.....	.....
b	9,654,104, <u>1</u> 03	.....	.....
c	6,123, <u>6</u> 89,456	.....	.....
d	5,00 <u>0</u> ,412,698	.....	.....
e	<u>7</u> ,021,842,036	.....	.....
f	7,002,852,3 <u>6</u> 9	.....	.....
g	9,852,14 <u>7</u> ,633	.....	.....
h	700, <u>5</u> 20,069	.....	.....
i	<u>4</u> 05,039,506	.....	.....

- 5 Complete the following table:

	Number	The place in which digit 4 is located
a	227,102, <u>2</u> 45	.....
b	13, <u>2</u> 47,258	.....
c	<u>4</u> ,127,578	.....
d	225,12 <u>4</u>	.....
e	2, <u>4</u> 15,220	.....
f	6,125,200, <u>4</u> 82	.....
g	<u>2</u> 48,367,250	.....
h	<u>4</u> ,000,000,525	.....
i	5, <u>4</u> 00,300,200	.....

6 Circle the digit in the place shown in front of it:

	Number	The place in which the digit is located
a	528,745,432	Ones
b	789,654,026	Hundreds
c	427,167,523	Thousands
d	210,347,163	Millions
e	793,400,063	Ten Thousands
f	7,463,814,325	Milliards
g	9,521,005,136	Hundred Millions
h	8,852,963,852	Ten Millions
i	520,753,159	Hundred Thousands
j	8,201,093	Tens

7 Complete the following:

- The **value** of the digit 6 in 12**6**,251 is
- The **value** of the digit 3 in **3**2,105 is
- The **place value** of the digit 0 in 12**0**,213 is the
- The **place value** of the digit 4 in 10,21**4** is the
- The number 77,002,205 is read as:
- The number "Three hundred five million, fourteen thousand, seven" is written as: (In standard form)
- The digit 3 in **3**6,154,258 is in the place.
- The digit 8 in 45,**18**5,252 is in the place.
- The digit in 7,335,102,562 is in the Millions place.
- The digit in 922,157,528 is in the Hundred Millions place.

8 Choose the correct answer:

- a The **value** of the digit 7 in 125,35**7** is
(7 or 70 or 700 or 7,000)
- b The **value** of the digit 0 in 87,**0**51 is
(0 or 10 or 100 or 1,000)
- c The **place value** of the digit 8 in 15,3**8**2 is the
(Ones or Tens or Hundreds or Millions)
- d The **place value** of the digit 7 in **7**25,145 is the
(Hundreds or Thousands or Ten Thousands or Hundred Thousands)
- e Four milliard, six hundred five million, ninety thousand, fifteen =
(4,065,090,015 or 4,650,900,015 or 4,605,090,015 or 9,506,415)
- f Six milliard, five hundred thousand, thirty =
(600,030,015 or 6,000,500,030 or 6,500,000,030 or 6,500,000,300)
- g The digit 8 in 214,2**8**4,697 is in the place.
(Ones or Tens or Ten Thousands or Ten Millions)
- h The digit in 745,215,369 is in the Hundred Thousands place.
(3 or 2 or 7 or 9)

9 Complete the following:

- a 30 Tens = b 50 Ten Thousands =
- c 20 Ten Millions = d 600 Ones =
- e 700 Hundreds =
- f 200 Hundred Thousands =
- g 90 Millions = h 100 Thousands =
- i 5,000 = Hundreds j 10,000 = Thousands
- k 800,000 = Ten Thousands

l 90,000 = Tens

m 1,000,000,000 = Millions

10 Complete the following:

a 500 Tens = Thousands

b 600 Thousands = Tens

c 60 Ten Millions = Hundreds

d 1,000 Hundreds = Thousands

e 3,000 Hundred Thousands = Millions

f 9,000 Millions = Millions

g 100 Thousands = Ten Thousands

11 Choose the correct answer:

a The **value** of the digit 8 in 36,815,250 is

(8,000 or 80,000 or 800,000 or 8,000,000)

b The **place value** of the digit 7 in 33,128,275 is the

(Ones or Tens or Ten Thousands or Hundred Thousands)

c The **value** of the digit 6 in the Ten Thousands place is

(60 or 6,000 or 60,000 or 600,000)

d The **value** of the digit 3 in the Hundred Millions place is

(300 or 3,000 or 300,000 or 300,000,000)

e 60 Hundred Thousands =

(60,000 or 600,000 or 6,000,000 or 6,000)

f 800 Thousands = Hundreds

(8,000 or 800 or 80 or 8)

g 4 Millions = Ten Thousands

(400 or 4,000 or 40,000 or 400,000)

h 4,000 = Hundreds

(4 or 40 or 400 or 4,000)

i 60,000 = Thousands

(6 or 60 or 600 or 6,000)

Unit 1 | Place Value

- j 200 Millions = (20 or 200 or 200,000 or 200,000,000)
- k 500 Tens = (500 or 5,000 or 50,000 or 500,000)
- l 1 Milliard = Millions (100 or 10,000 or 1,000 or 1,000,000)
- m The **value** of the digit 3 in 9,2**3**7,468,258 is
(3,000,000,000 or 300,000,000 or 30,000,000 or 3,000,000)
- n The **smallest** number formed from the digits 5, 6, 7, 2, 0, and 8 is
(876,250 or 205,678 or 678,205 or 567,208)
- o 200,000 = times of 200 (100 or 1,000 or 10,000 or 100,000)

12 If an ant colony consists of 10 hills and each hill contains the same number of ants, complete the following table:

The number of ants in each hill	3	75	16	94	128	5,623
The number of ants in the colony						

13 Complete the following:

- a 8,000 = 10 times of
- b 12,000 = 10 times of
- c 1 Million = 10 times of
- d 600,000 = 10 times of
- e Thousands = 10 times of 80,000
- f = 10 times of 3 Thousands

Accumulative Assessment

Up to Lesson 2

1 Choose the correct answer:

- a The **place value** of the digit 0 in 30,745 is
(Hundreds ☐ or Thousands ☐ or Ten Thousands ☐ or Zero)
- b 60,000 = times of 600 (10 ☐ or 100 ☐ or 1,000 ☐ or 10,000)
- c is the **smallest** 7-digit number.
(Milliard ☐ or Million ☐ or Hundred million ☐ or Ten million)
- d The **place value** of the digit 7 in 251,475,253
is the (Thousands ☐ or Tens ☐ or Ten Thousands ☐ or Ten Millions)
- e 400 Hundreds + 500 Tens =
(40,500 ☐ or 45,000 ☐ or 4,500 ☐ or 40,500)
- f The **value** of the digit 3 in 234,542,124 is
(3,000,000 ☐ or 30,000,000 ☐ or 30,000 ☐ or 300,000,000)
- g 400 Thousands = (4,000 ☐ or 40,000 ☐ or 400,000 ☐ or 4,000,000)
- h 800,000 = Ten Thousands (8,000 ☐ or 800 ☐ or 80 ☐ or 8)
- i Five hundred two thousand
(520,000 ☐ or 2,500,000 ☐ or 502,000 ☐ or 205,000)

2 Write the following numbers in **word form**:

- a 80,304,276:
-
-
- b 2,300,250,000:
-
-

Lessons 3&4

1 Write the following numbers in word form:

a 7,200,150,208:

b 400,300,200:

c 1,500,000:

d 20,050,003:

e $4,000,000,000 + 6,000,000 + 20,000 + 300 + 20 + 6$:

f $2,000,000,000 + 30,000,000 + 700,000 + 600$:

g $200,000,000 + 700,000$:

2 Write the following numbers in **standard form**:

- a Five hundred million, twenty thousand, fifty:
- b Four milliard, seven million, five thousand, nine:
- c Eighteen million, ninety thousand:
- d One milliard, five hundred twenty thousand, forty :
- e $8,000,000,000 + 50,000,000 + 60,000 + 300 + 7 =$
- f $9,000,000,000 + 800,000 + 300 =$
- g $9,000,000,000 + 30,000,000 + 60,000 + 20 =$
- h $3,000,000,000 + 300,000 =$

3 Write the **expanded form** of the following numbers:

- a $400,120,603 =$ + + + +
- b $5,200,090,050 =$
- c $20,750,600 =$
- d $250,000,524 =$
- e Six milliard, eight hundred fifteen million, four hundred thousand, thirty
 $=$

- f Nine milliard, thirty-five million, nine hundred five thousand, three hundred,
 six $=$

- g One hundred ninety million, six hundred twenty-four thousand, seventeen
 $=$

- h Sixty-three million, five hundred, ninety-seven $=$

4 Complete the following table:

	Composed Numbers (Standard Form)	Decomposed Numbers (Expanded Notation)
a	300,250,102	$(3 \times \dots) + (2 \times \dots)$ $+ (5 \times \dots) + (1 \times \dots)$ $+ (2 \times \dots)$
b	7,050,000,865	..... ..... .....
c	3,006,080,500	..... ..... .....
d	.....	$(2 \times 1,000,000,000) + (9 \times 10,000,000)$ $(8 \times 100,000) + (7 \times 1,000) + (3 \times 100)$ $+ (7 \times 10) + (1 \times 6)$
e	.....	$(3 \times 1,000,000,000) + (6 \times 100,000,000)$ $+ (5 \times 10,000) + (3 \times 1,000) + (8 \times 10)$
f	.....	$(2 \times 100,000,000) + (5 \times 10,000,000)$ $(6 \times 1,000,000) + (9 \times 1,000) + (4 \times 100)$ $+ (8 \times 10) + (3 \times 1)$

- 5 Use the **place value** tables to help you write the following numbers in different forms:

a

Milliards	Millions			Thousands			Ones		
Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones
8	0	0	7	2	0	6	0	5	9

1 Standard Form:

2 Word Form:

3 Expanded Form:

4 Expanded Notation:

b

Milliards	Millions			Thousands			Ones		
Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones
	9	2	0	7	0	2	8	0	0

1 Standard Form:

2 Word Form:

3 Expanded Form:

4 Expanded Notation:

c

Milliards	Millions			Thousands			Ones		
Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones
		3	9	8	0	0	2	0	2

1 Standard Form:

2 Word Form:

3 Expanded Form:

4 Expanded Notation:

d

Milliards	Millions			Thousands			Ones		
Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones
			2	8	9	0	1	0	5

1 Standard Form:

2 Word Form:

3 Expanded Form:

4 Expanded Notation:

6 Choose the correct answer:

a The number 35,200,810 in **word form** is

(thirty-five thousand, two hundred eighty-one

or thirty-five million, two hundred thousand, eight hundred, ten

or three hundred fifty-two million, eight hundred, ten

or thirty-five million, two thousand, eight hundred, ten)

- b Six hundred and fifty million, thirteen thousand, five hundred, twenty-six =
 (In standard form)

(605,130,516 or 605,013,516 or 650,013,526 or 6,513,516)

- c $7,000,000,000 + 400,000,000 + 2,000 + 30 = \dots\dots\dots$ (In standard form)

(740,002,030 or 7,400,002,030 or 740,002,030 or 7,423)

- d $150,000,230 = \dots\dots\dots$ (In expanded form)

(100,000,000 + 5,000,000 + 200 + 30 or 10,000,000 + 50,000,000 + 200 + 30 or

100,000,000 + 50,000,000 + 200 + 30 or 100,000 + 50,000 + 20 + 3)

- e $8,000,000,000 + 20,000,000 + 800,000 + 2,000 + 80 = \dots\dots\dots$

(82,828 or 8,280,280 or 8,020,802,080 or 80,280,080)

- f $(6 \times 1,000,000,000) + (6 \times 10,000,000) + (6 \times 10,000) + (6 \times 100)$
 $+ (6 \times 10) = \dots\dots\dots$

(6,060,060,660 or 660,060,660 or 6,660,000,660 or 6,666)

- g $3,000,000,000 + 50,000,000 + 12,000 + 245 = \dots\dots\dots$

(3,512,245 or 3,512,245 or 3,512,000,245 or 3,050,012,245)

- h $5,000,000,000 + 500,000,000 + 50,000 + 500 = \dots\dots\dots$

(5,555 or 5,000,550,500 or 5,500,050,500 or 5,550,000,500)

- i Three hundred five million, seven hundred thousand, sixteen =

(350,716,000 or 350,700,016 or 305,700,160 or 305,700,016)

- j Five milliard, six million, nine thousand, seven =

(5,697 or 5,006,009,007 or 5,060,090,070 or 5,600,900,700)

- k $(3 \times 100,000,000) + (3 \times 10,000,000) + (3 \times 100,000) + (3 \times 10,000)$

$+ (3 \times 100) + (3 \times 10) = \dots\dots\dots$

(33 million, 33 thousand, 33 or 303 million, 303 thousand, 303

or 330 million, 330 thousand, 330 or 333 thousands, 333)

Accumulative Assessment

Up to Lesson 4

1 Choose the correct answer:

a $350,000,350 =$ (In word form)

(three hundred fifty thousand, three hundred, fifty

or thirty-five million, three hundred, fifty

or three hundred fifty million, three hundred, fifty

or fifty-three million, thirty-five)

b $(4 \times 1,000,000,000) + (5 \times 10,000,000) + (3 \times 1,000,000) + (4 \times 1,000)$
 $+ (5 \times 100) + (3 \times 1) =$ (In standard form)

(453,453 or 4,053,004,503 or 4,053,000,453 or 4,530,045,003)

c Four hundred thirty-five million, four hundred thousand, three hundred, five = (In standard form)

(435,435 or 435,400,350 or 435,040,305 or 435,400,305)

d $200,000,000 + 60,000,000 + 20,000 + 6,000 + 20 + 6 =$ (In standard form)

(206,206,206 or 260,026,026 or 26,026,206 or 26,626)

e The value of the digit 8 in 180,302,201 is

(8,000,000,000 or 800,000,000 or 80,000,000 or 8,000,000)

f The place value of digit 1 in the number 5,105,050,520:

(Millions or Hundred Millions or Hundred Thousands or Millions)

g $4,000,000,000 + 30,000,000 + 900,000 + 5,000 + 70 =$

(40,030,095,070 or 4,300,900,507 or 4,030,905,070 or 4,030,900,570)

- h The **place value** of the digit 3 in 80,2**3**4,256 is the
 (Ten Thousands **or** Hundred Thousands **or** Hundreds **or** Ten Millions)
- i If the digit 5 is in the Millions place, then its value is (5 x).
 (100,000 **or** 10,000 **or** 1,000 **or** 1,000,000)
- j Seven hundred million, seventy thousand =
 (700,007,000 **or** 700,070,000 **or** 700,700,070 **or** 700,000,070)

2 Use the **place value** table to help you write the following number in different forms:

Milliards	Millions			Thousands			Ones		
Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones
3	0	9	0	2	0	0	2	4	0

- 1 Standard Form:
- 2 Word Form:

- 3 Expanded Form:

- 4 Expanded Notation:



Assessment on Concept 1

1 Choose the correct answer:

- a The **value** of the digit 3 in the Ten Thousands place is
(30 or 3,000 or 30,000 or 300,000)
- b The **value** of the digit 2 in 6,3²6,457 is
(200 or 2,000 or 20,000 or 2,000,000)
- c 4 milliard + 6 million + 54 thousand + 28 =
(8,204,506,004 or 4,600,540,280 or 465,428 or 4,006,054,028)
- d Six million, six thousand =
(606,000 or 6,600,000 or 6,060,000 or 6,006,000)
- e $(5 \times 100,000,000) + (4 \times 10,000) + (6 \times 10) = \dots\dots\dots$
(50,004,060 or 5,040,060 or 5,000,040,060 or 5,040,060)
- f Three hundred twenty-four thousand, seventy-three (in standard form)
= (300,024,073 or 3,240,073 or 324,000,073 or 324,073)
- g The **value** of the digit 3 in the number 8,0³0,124,005 is
(3,000,000 or 30,000,000 or 30,000 or 30,000,000,000)

2 Answer the following questions:

- a Write the number in **word form**: 8,930,007,201
.....
- b What is the **place value** of the digit 4 in the number 3,8⁴0,321,005?
.....
- c Write the number in **expanded form**: 7,020,305,004
.....

Unit 1 Place Value

Concept 1.2 Using Place Value

Lessons 5-7

1 Complete the following table using ($<$, $=$, or $>$):

a	20,000,900	.....	20,000,009
b	45 million, 45 thousand	.....	45,045,000
c	$(8 \times 10,000,000) + (8 \times 100)$	.....	80,000,008
d	$(6 \times 1,000,000,000) + (6 \times 1)$	.....	6,000,000,006
e	5,500,550	.....	550 million, 550
f	The smallest 9-digit number	.....	$1 \times 1,000,000,000$
g	Three hundred, thirty three million	.....	3,330,000,000
h	100,000,000	.....	The greatest 8-digit number
i	The smallest 8-digit number	.....	$1 \times 100,000,000$
j	$(3 \times 100,000,000) + (3 \times 1)$	.....	Three hundred million, three
k	Two milliard, five hundred five thousand, fifty	.....	2,550,000,050

2 Arrange the following numbers in an **ascending** order:

a 25,030,000 , 550,000 , 5,000 , 45,000

..... , , ,

b 360,548 , 205,687 , 545,352 , 154,200

..... , , ,

c 557,859 , 557,895 , 557,589 , 557,985

..... , , ,

d 500,005 , 505,550 , 500,000 , 500,500

..... , , ,

3 Arrange the following numbers in a **descending** order:

a 909,909 , 900,000 , 999,999 , 900,990

..... , , ,

b 55,125 , 55,512 , 55,152 , 55,251

..... , , ,

c 300,002,100 , 200,030,001 , 300,020,010 , 200,300,100

..... , , ,

4 Arrange the following numbers in an **ascending** order.
Write the numbers in **standard form**:

Number	Standard Form	Order
Five hundred thirty million, four hundred, fifty		
Five hundred three million, four hundred thousand, five		
Five hundred thirty million, four hundred five thousand		
Five million, thirty thousand, four hundred, fifty		
Fifty million, thirty thousand, forty-five		

5 Arrange the following numbers in a **descending** order.
Write the numbers in **standard form**:

Number	Standard Form	Order
Ninety-nine million, nine hundred ninety thousand, ninety		
Nine milliard, ninety		
Nine hundred, ninety-nine million		
Nine milliard, ninety thousand		
Nine hundred million, nine hundred thousand, nine hundred		

- 6 Arrange the following numbers in an **ascending** order.
Write the numbers in **standard form** :

Number	Standard Form	Order
Five milliard, three hundred thousand, nine		
$(5 \times 1,000,000,000) + (3 \times 100,000) + (9 \times 10)$		
$5,000,000,000 + 300,000 + 900$		
5,000,003,900		
Five milliard, three thousand, nine		

- 7 Arrange the following numbers in a **descending** order.
Write the numbers in **standard form** :

Number	Standard Form	Order
$1,000,000,000 + 500,000 + 3,000 + 200 + 5$		
$(1 \times 1,000,000,000) + (3 \times 10,000) + (2 \times 100) + (5 \times 10)$		
1 milliard, 50 million, 325 thousand		
1,500,030,250		
1 milliard, 32 million, 5 thousand		

- 8 Choose the correct answer:

- a The **value** of the digit in the Hundred Thousands place the value of the digit in the Millions place (☐ $<$ ☐ $=$ ☐ $>$ ☐ $\times$)
- b 50 Ten Millions 5 Milliards (☐ $<$ ☐ $=$ ☐ $>$ ☐ $\times$)
- c 450,000,450 Forty-five million, forty-five (☐ $<$ ☐ $=$ ☐ $>$ ☐ $\times$)
- d $>$ 3 millions (3,000,000 ☐ 2,999,999 ☐ 10,000,000 ☐ 300,000)
- e 40 millions $>$ $>$ 30 millions
(350,220,000 ☐ 35,202,000 ☐ 3,022,000 ☐ 3,441,000)
- f $<$ 795,002 (792,689 ☐ 796,002 ☐ 795,020 ☐ 7,950,020)
- g $>$ 279 (270 ☐ 219 ☐ 269 ☐ 280)
- h $>$ 70,500 (57,000 ☐ 75,000 ☐ 70,050 ☐ 70,005)

Accumulative Assessment

Up to Lesson 7

1 Choose the correct answer:

a Two milliard, three thousand, three = (In standard form)

(2,300,300 or 2,000,003,003 or 2,000,303,000 or 2,003,003)

b The digit 8 in 214,284,697 is in the place.

(Ones or Tens or Ten Thousands or Ten Millions)

c $200,450 > \dots\dots\dots$

(245,005 or 204,500 or 245,000 or 200,045)

d $100,000 < \dots\dots\dots$

(98,765 or 99,999 or 1,000,000 or 99,000)

e $(9 \times 100,000,000) + (2 \times 100,000) + (6 \times 1,000) + (8 \times 1) = \dots\dots\dots$

(900,206,008 or 9,000,200,608 or 900,200,608 or 9,200,006,008)

f The **place value** of the digit 0 in 9,025,123 is

(0 or Hundreds or Ten Thousands or Hundred Thousands)

g The **value** of the digit 5 in the Millions place = **1,000 times** the **value** of the digit 5 in the place.

(Thousands or Hundreds or Ten Hundreds or Ten Thousands)

h $(8 \times 1,000,000) + (8 \times 1,000) = \dots\dots\dots$

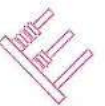
(800,800 or 8,000,800,000 or 8,008,000 or 8,800,000)

2 Arrange the following numbers in an **ascending** order:

10,025,000 , 10,002,005 , 10,200,050 , 10,020,500

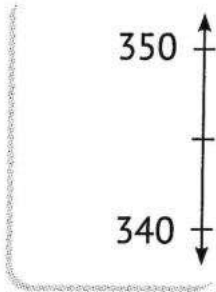
..... , , ,

Lesson 8

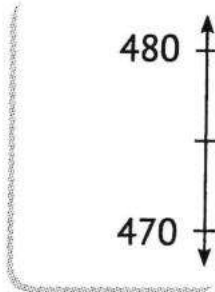


- 1 Write down the **midpoint** of the number line. Then, **locate** each number on the number line. **Round** each number to the nearest **Ten**:

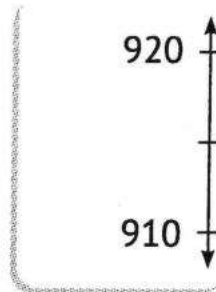
a $343 \approx \dots\dots\dots$



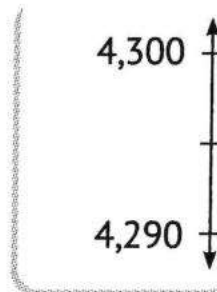
b $472 \approx \dots\dots\dots$



c $912 \approx \dots\dots\dots$

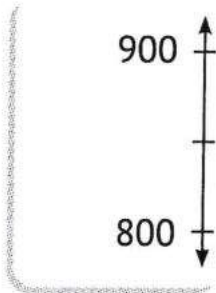


d $4,298 \approx \dots\dots\dots$

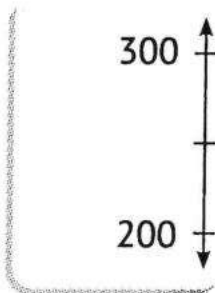


- 2 Write down the **midpoint** of the number line. Then, **locate** each number on the number line. **Round** each number to the nearest **Hundred**:

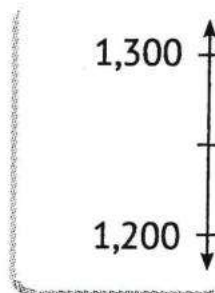
a $829 \approx \dots\dots\dots$



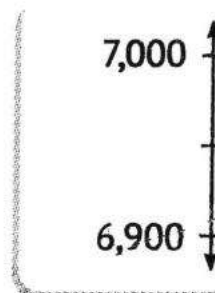
b $293 \approx \dots\dots\dots$



c $1,280 \approx \dots\dots\dots$

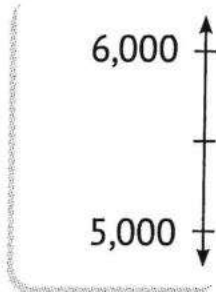


d $6,988 \approx \dots\dots\dots$

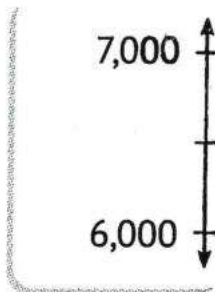


- 3 Write down the **midpoint** of the number line. Then, **locate** each number on the number line. **Round** each number to the nearest **Thousand**:

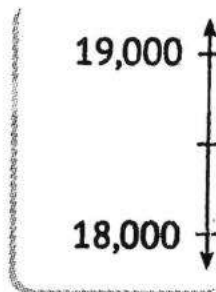
a $5,425 \approx \dots\dots\dots$



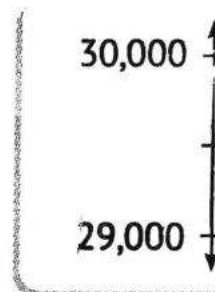
b $6,774 \approx \dots\dots\dots$



c $18,524 \approx \dots\dots\dots$

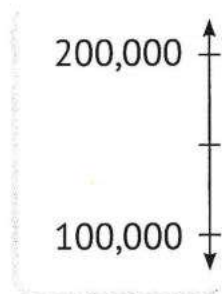


d $29,954 \approx \dots\dots\dots$

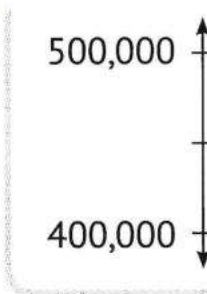


- 4 Write down the **midpoint** of the number line. Then, **locate** each number on the number line. **Round** each number to the nearest **Hundred Thousand**:

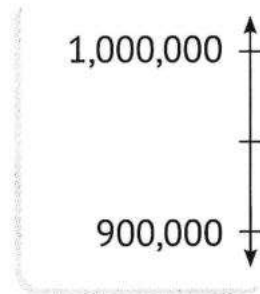
a $178,652 \approx \dots\dots\dots$



b $462,685 \approx \dots\dots\dots$

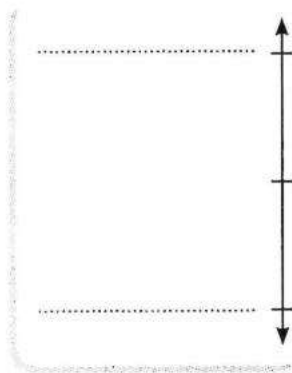


c $972,821 \approx \dots\dots\dots$

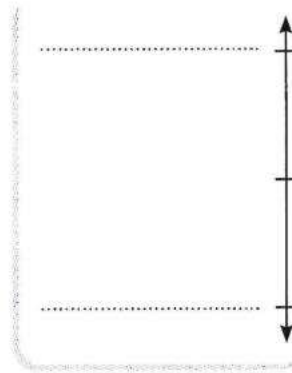


- 5 Write down the **midpoint** of the number line. Then, **locate** each number on the number line. **Round** each number to the nearest **Ten Million**:

a $45,284,564 \approx \dots\dots\dots$



b $2,326,120 \approx \dots\dots\dots$



- 6 Write down the **midpoint** of the number line. Then, **locate** each number on the number line. **Round** each number to the nearest **Milliard**:

a $5,205,452,152 \approx \dots\dots\dots$



b $4,815,600,002 \approx \dots\dots\dots$



7 Round the following numbers to the nearest **10**:

- | | |
|--------------------------|--------------------------|
| a 54 $\approx$ | b 76 $\approx$ |
| c 845 $\approx$ | d 967 $\approx$ |
| e 7 $\approx$ | f 2,595 $\approx$ |
| g 75,999 $\approx$ | h 99,999 $\approx$ |

8 Round the following numbers to the nearest **1,000**:

- | | |
|--------------------------|---------------------------|
| a 7,869 $\approx$ | b 6,289 $\approx$ |
| c 398 $\approx$ | d 9,964 $\approx$ |
| e 29,456 $\approx$ | f 99,598 $\approx$ |
| g 99,900 $\approx$ | h 456,400 $\approx$ |

9 Complete the following:

- | | |
|---|----------------------------------|
| a 4,545 $\approx$ | (To the nearest 1,000) |
| b 258,654 $\approx$ | (To the nearest 100,000) |
| c 299,999 $\approx$ | (To the nearest 10) |
| d 1,000,000 $\approx$ | (To the nearest 100,000) |
| e 89,541 $\approx$ | (To the nearest 10,000) |
| f 654 $\approx$ 650 | (To the nearest) |
| g 8,840 $\approx$ 9,000 | (To the nearest) |
| h 2,458,235 $\approx$ 2,000,000 | (To the nearest) |
| i 458,605 $\approx$ 459,000 | (To the nearest) |
| j 7,456,572 $\approx$ 7,000,000 | (To the nearest) |
| k $754 + 245 =$ $\approx$ | (To the nearest 10) |
| l $2,856 + 6,410 =$ $\approx$ | (To the nearest 1,000) |
| m $876 - 225 =$ $\approx$ | (To the nearest 100) |
| n $15,000 - 125 =$ $\approx$ | (To the nearest 1,000) |

10 Choose the correct answer:

a $980 \approx \dots\dots\dots$ (To the nearest 100) (980 or 900 or 990 or 1,000)

b $906,456 \approx \dots\dots\dots$ (To the nearest 100,000)

(906,000 or 1,000,000 or 910,000 or 900,000)

c $99,768 \approx \dots\dots\dots$ (To the nearest 1,000)

(99,800 or 100,000 or 90,000 or 99,000)

d $6,450,450, \approx \dots\dots\dots$ (To the nearest 1,000,000)

(6,500,000 or 5,000,000 or 6,000,000 or 7,000,000)

e $258 \approx 300$ (To the nearest) (10 or 100 or 1000 or 10,000)

f $6,587 \approx 6,600$ (To the nearest) (10 or 100 or 10,000 or 1,000)

g $295,120 \approx 300,000$ (To the nearest)

(100 or 1,000 or 10,000 or 10,000,000)

h The **largest** whole number that can be rounded to the nearest 10 so that the result is 450 is

(460 or 458 or 454 or 450)

i The **smallest** whole number that can be rounded to the nearest 100 so that the result is 1,200 is

(1,159 or 1,299 or 1,150 or 1,100)



Accumulative Assessment

Up to Lesson 8

1 Choose the correct answer:

a $7,542 \approx$ (To the nearest **Thousand**)
(7,500 **or** 7,000 **or** 8,000 **or** 75,000)

b $\approx 5,000$ (To the nearest **Hundred**)
(5,490 **or** 5,950 **or** 4,950 **or** 4,590)

c $6,566 \approx 6,600$ (To the nearest)
(10 **or** 100 **or** 1,000 **or** 10,000)

d The number of whole numbers that can be rounded to the nearest **10** so that the result is 70 is
(5 **or** 10 **or** 11 **or** 20)

e One million 9,999,999 (**<** **or** **=** **or** **>**)

f Eight hundred ninety-six million, three thousand, fifteen =
(896,315,000 **or** 896,300,015 **or** 896,003,015 **or** 896,003,150)

g The **place value** of the digit 5 in 5,069,420,000 is the
(Millions **or** Ten Millions **or** Hundred Millions **or** Billions)

h ≈ 500 (To the nearest **100**) (552 **or** 449 **or** 590 **or** 451)

"Complete by writing the greatest whole number possible."

2 Answer the following:

a Arrange the following numbers in an **ascending** order:

Three hundred thirty thousand , 30,000,030,000 ,
30,030,000 , Thirty million

..... , , ,

b Find the result, then round it to the nearest **1,000**:

$6,475 + 4,125 =$ $\approx$



Assessment on Concept 2

1 Choose the correct answer:

- a $210,753 > \dots\dots\dots$ (753,200 or 210,755 or 217,053 or 200,753)
- b 40 ten million 4 milliard ($<$ or $=$ or $>$ or $\geq$)
- c The value of the digit 3 in the Hundred Thousands place
the value of the digit 3 in the Millions place. ($<$ or $=$ or $>$ or $\geq$)
- d $471,326 \approx \dots\dots\dots$ (To the nearest Thousand)
(471,000 or 470,000 or 472,000 or 1,000)
- e $95,460,813 \approx \dots\dots\dots$ (To the nearest 100,000)
(96,000,000 or 95,500,000 or 95,460,000 or 100,000,000)
- f $2,000,000 + 40,000 + 500 + 6 = \dots\dots\dots$
(2,400,506 or 2,040,506 or 2,004,560 or 2,040,056)
- g $5,182 \approx \dots\dots\dots$ (To the nearest 1,000)
(5,000 or 5,200 or 6,000 or 1,000)

2 Answer the following:

- a Arrange the following numbers in an ascending order:

3,001,328,391 , 3,999,830 , 3,999,992 , 3,010,001,034

..... , , ,

- b Complete using ($<$, $=$, or $>$):

1 Four hundred million, four $(4 \times 100,000,000) + (4 \times 1)$

2 7,000,707,007 Seven milliard, seven hundred seventy-seven

Unit ² Addition and Subtraction Strategies

Concept 2.1 Using Addition and Subtraction Strategies

Lesson 1

1 Complete the following, then write the **addition property used**:

a $7 + 6 = \dots + 7$

"..... Property"

b $(7 + \dots) + 4 = 7 + (9 + 4)$

"..... Property"

c $8 + 0 = \dots$

"..... Property"

d $27 + 19 = 19 + \dots$

"..... Property"

e $0 + \dots = 9$

"..... Property"

f $(41 + 27) + 21 + 94 = \dots + (27 + 21) + \dots$

"..... Property"

g $\dots + 18 = 18 + 39$

"..... Property"

h $28 + \dots = 28$

"..... Property"

i $(\dots + 125) + 417 = 300 + (\dots + 417)$

"..... Property"

2 Complete the following problems using the **properties of addition**, then write the **property used**:

a $15 + 27 + 85 = \dots + 85 + 27$

"..... Property"

$= (\dots + \dots) + \dots$

"..... Property"

$= \dots + \dots = \dots$

Unit 2 | Addition and Subtraction Strategies

b $755 + 615 + 245 = 755 + \dots + 615$

$= (\dots + \dots) + \dots$

$= \dots + \dots = \dots$

"..... Property"

"..... Property"

c $42 + 908 + 92 = 42 + (\dots + \dots)$

$= \dots + \dots = \dots$

"..... Property"

d $244 + 0 + 256 = 0 + \dots + 256$

$= 0 + (\dots + \dots)$

$= \dots + \dots$

$= \dots$

"..... Property"

"..... Property"

"..... Property"

e $244 + 0$

$= 0 + \dots$

$= \dots$

"..... Property"

3 Choose the property used in the following:

(Identity Element or Commutative or Associative)

a $9 + 2 = 2 + 9$

"..... Property"

b $(100 + 117) + 25 = 100 + (117 + 25)$

"..... Property"

c $245 + 0 = 0 + 245$

"..... Property"

d $8 + (5 + 12) = (8 + 5) + 12$

"..... Property"

e $205 + 15 = 15 + 205$

"..... Property"

f $0 + 215 = 215 + 0 = 215$

"..... Property"

g $4 + 3 + (7 + 6) = 4 + (3 + 7) + 6$

"..... Property"

h $45 + 0 = 45$

"..... Property"

i $42 + 15 + 85 = 42 + (15 + 85) = 42 + 100 = 142$

"..... Property"

j $45 + 55 + 123 + 27 = (45 + 55) + (123 + 27) = 100 + 250 = 350$

"..... Property"

Accumulative Assessment

Up to Lesson 1

1 Choose the correct answer:

a $(85 + 48) + 52 = \dots + (48 + 52)$ (84 or 85 or 25 or 100)

b The **place value** of the digit 8 in 28,147,256 is

(Hundred Thousands or Ten Thousands or Ten Millions or Millions)

c $25,458 \approx \dots$ (To the nearest 10,000)

(20,000 or 25,000 or 26,000 or 30,000)

d $732 + \dots = 732$ (1 or 0 or 10 or 100)

e $25,452 \approx 30,000$ (To the nearest)

(100 or 1,000 or 10,000 or 100,000)

f $25 + (75 + 26) = (25 + 75) + 26$ "..... Property"

(Identity Element or Commutative or Associative or Distributive)

g Five hundred fifty million, five = (In standard form)

(500,055 or 550,005 or 550,005,000 or 550,000,005)

2 Answer the following:

a Complete using (<, =, or >):

1 Three million, five hundred 3,000,050

2 370,205 $(3 \times 100,000) + (7 \times 1,000) + (2 \times 100) + (5 \times 1)$

3 909,990 990,090

4 400,300,200 $400 + 300 + 200$

b Arrange the following numbers in an **ascending** order:

3,584,852 , 3,458,582 , 3,854,852 , 3,548,258

Lesson 2

1 Use the **rounding strategy**, then find the result:

a $76 + 42$ (To the nearest 10)

→ $80 + 40 = \dots\dots\dots$

b $84 + 37$ (To the nearest 10)

→ $\dots\dots\dots + \dots\dots\dots = \dots\dots\dots$

c $96 - 24$ (To the nearest 10)

→ $\dots\dots\dots - \dots\dots\dots = \dots\dots\dots$

d $154 + 318$ (To the nearest 100)

→ $\dots\dots\dots + \dots\dots\dots = \dots\dots\dots$

e $368 - 318$ (To the nearest 100)

→ $\dots\dots\dots - \dots\dots\dots = \dots\dots\dots$

f $2,159 + 3,769$ (To the nearest 1,000)

→ $\dots\dots\dots + \dots\dots\dots = \dots\dots\dots$

g $77,981 - 69,328$ (To the nearest 1,000)

→ $\dots\dots\dots - \dots\dots\dots = \dots\dots\dots$

2 Find the result of each of the following:

a $65,742$

+ $24,953$

b $497,864$

+ $153,692$

c $974,356$

+ $25,644$

d $124,629$

+ $298,680$

e $845,656$

+ $975,546$

f $999,999$

+ $200,001$

g $225,564 + 347,660 = \dots\dots\dots$

h $341,250 + 219,263 = \dots\dots\dots$

i $3,224,659 + 6,418,256 = \dots\dots\dots$

j $332,456,989 + 667,543,011 = \dots\dots\dots$

3 Complete the following tables:

Determine which of the **estimates** is closest to the **actual solution**.

Problem	To the Nearest 10	To the Nearest 100	To the Nearest 1,000
a 24,456 + 13,428	 +	 +	 +
.....	 ()	 ()	 ()

Problem	To the Nearest 10	To the Nearest 100	To the Nearest 1,000
b 256,634 + 885,365	 +	 +	 +
.....	 ()	 ()	 ()

Problem	To the Nearest 10	To the Nearest 100	To the Nearest 1,000
c 2,256 + 3,815	 +	 +	 +
.....	 ()	 ()	 ()

Problem	To the Nearest 10	To the Nearest 100	To the Nearest 1,000
d 125,278 + 289,132	 +	 +	 +
.....	 ()	 ()	 ()

4 Answer the following:

- a** Nada has **7,245** piasters, and Ahmed has **9,372** piasters.

What is the sum of what Nada and Ahmed have together?

Explain your steps, and then check the reasonableness of your answer.

Estimate (Round to the nearest **100**):

.....

Actual Answer:

- b** The number of girls in a school is **458** and the number of boys is **367**.

What is the **total number** of students in this school?

Explain your steps, and then check the reasonableness of your answer.

Estimate (Round to the nearest **10**):

.....

Actual Answer:

- c** The desert silver ant is the fastest ant on the planet. It can move about **855** mm per second. If this ant can maintain this speed for **two seconds**, how far will it go?

Explain your steps, and then check the reasonableness of your answer.

Estimate (Round to the nearest **100**):

.....

Actual Answer:

- d** The distance between Aswan and Assiut is **511** km, and the distance between Assiut and Alexandria is **619** km.

How far is the distance between Alexandria and Aswan?

Explain your steps, and then check the reasonableness of your answer.

Estimate (Round to the nearest **100**):

.....

Actual Answer:

- e** **686** tourists visited the Egyptian Museum on Sunday, and **621** tourists visited it on Monday.

How many tourists visited the museum in the two days?

Explain your steps, and then check the reasonableness of your answer.

Estimate (Round to the nearest **100**):

.....

Actual Answer:

Accumulative Assessment

Up to Lesson 2

1 Choose the correct answer:

- a $(3 \times 100,000) + (7 \times 100) + (5 \times 10) =$
 (300,570 or 30,750 or 300,750 or 3,000,750)
- b $8 + (7 + 9) = (8 + 7) +$
 (7 or 15 or 16 or 9)
- c $74,632 \approx$
 (To the nearest 1,000)
 (74,000 or 75,000 or 74,600 or 70,000)
- d $7,145 \approx 7,100$ (To the nearest)
 (10 or 100 or 1,000 or 10,000)
- e $(8 \times 100,000,000) + (8 \times 1,000) =$
 (88,000,000 or 808,000 or 800,008,000 or 800,800,000)
- f $593 \approx 600$ (To the nearest)
 (10 or 100 or 1,000 or 10,000)
- g $25 + 75 = 75 + 25$ "..... Property"
 (Identity Element or Commutative or Associative or Distributive)

2 Answer the following:

- a Arrange the following numbers in a **descending** order:

990,909 , 9,900,990 , 100,000 , 1,000,000

- b 773 ships passed through the Suez Canal in January, and 375 ships crossed it in February. Find the number of ships that passed through it in the two months. Explain your steps and then check the reasonableness of your answer.

Estimate (Use rounding to the nearest 100):

Actual Answer:

Lesson 3

1 Find the result of each of the following:

a $65,438$

$- 29,278$

b $700,976$

$- 158,295$

c $250,039$

$- 72,278$

d $706,007$

$- 520,055$

e $427,239$

$- 209,136$

f $100,000$

$- 1$

g $725,428 - 219,428 =$

h $401,800 - 84,658 =$

i $7,602,630 - 6,583,108 =$

j $125,324,725 - 89,000,999 =$

2 Complete the following tables:

Determine which of the **estimates** is closest to the **actual solution**.

Problem	To the Nearest 10	To the Nearest 100	To the Nearest 1,000
a $8,625$			
$- 5,273$			
	()	()	()

Problem	To the Nearest 10	To the Nearest 100	To the Nearest 1,000
b $25,365$			
$- 17,824$			
	()	()	()

Problem	To the Nearest 10	To the Nearest 100	To the Nearest 1,000
c 57,685 - 8,998	 -	 -	 -
.....	 ()	 ()	 ()

Problem	To the Nearest 10	To the Nearest 100	To the Nearest 1,000
d 632,089 - 528,873	 -	 -	 -
.....	 ()	 ()	 ()

3 Answer the following:

- a** Some students want to plant **621** trees in their village.

If they have already planted **476** trees, how many trees are left?

.....

.....

.....

- b** Sarah had **1,270** pounds, and she bought a dress for **630** pounds.

How many pounds are left with Sarah?

.....

.....

.....

- c** A primary school has **1,028** students, and **542** of them are girls.

How many boys are there in this school?

.....

.....

.....

-  Ⓔ Eman has 3,256 pounds, and Sameh has 2,804 pounds.
What is the difference between their money?

.....

.....

.....

-  Ⓕ The height of a tree is 1,200 cm, and the length of its shadow is 235 cm.

How much taller is the tree than its shadow?

.....

.....

.....

-  Ⓖ There are 4,015 books in a school library. 725 books were borrowed by the students.

How many books are left in the library?

.....

.....

.....

-  Ⓗ A family saved 3,250 pounds to buy a TV.

If the price of the TV is 5,100 pounds, how many pounds does this family need to buy the TV?

.....

.....

.....

Accumulative Assessment

Up to Lesson 3

1 Choose the correct answer:

- a The **place value** of the digit 6 in 5**6**,124,248 is the
(Thousands ☐ or Ten Thousands ☐ or Millions ☐ or Ten Millions)
- b $27,957 \approx 30,000$ (To the nearest)
(10 ☐ or 100 ☐ or 1,000 ☐ or 10,000)
- c $(3 \times 100,000,000) + (5 \times 100,000) + (7 \times 100) = \dots\dots\dots$
(300,500,700 ☐ or 357,000,000 ☐ or 300,005,700 ☐ or 300,570,000)
- d $4,000,000 + 60,000 + 100 + 9 = \dots\dots\dots$
(4,619 ☐ or 64,000,109 ☐ or 40,060,109 ☐ or 4,060,109)
- e $1,000,000 - 1 = \dots\dots\dots$ (9,999,999 ☐ or 999,999 ☐ or 99,999 ☐ or 1,000,001)
- f 50 Hundred Thousands = Thousands. (50 ☐ or 500 ☐ or 5,000 ☐ or 50,000)
- g $45 + 0 = 45$ (..... Property)
(Identity Element ☐ or Commutative ☐ or Associative ☐ or Addition)

2 Answer the following:

a Find the result of each of the following:

① $\begin{array}{r} 75,654 \\ + 15,257 \\ \hline \end{array}$	② $\begin{array}{r} 40,802 \\ + 9,258 \\ \hline \end{array}$	③ $\begin{array}{r} 63,880 \\ - 52,209 \\ \hline \end{array}$	④ $\begin{array}{r} 800,002 \\ - 89,566 \\ \hline \end{array}$
---	--	---	--

- b 773 ships passed through the Suez Canal in January, and 375 ships passed in February. Find the difference between the number of ships that passed through it in the two months.
-
-



Assessment on Concept 1

1 Choose the correct answer:

a $7 + 4 = 4 + 7$ (..... Property)

(Identity Element or Associative or Commutative or Addition)

b $85 + (13 + 45) = (85 + 13) +$ (58 or 45 or 13 or 85)

c $4 + 15 + 1 =$ (19 or 16 or 20 or 10)

d The Additive Identity Element is (2 or 5 or 0 or 1)

2 Find the result:

a $8,542 - 3,179 =$

b $2,456 + 1,664 =$

c $299 + 155 =$

d $425 - 198 =$

3 Answer the following:

a Mohamed bought a phone for 6,273 LE and a PC for 8,544 LE.

How much money did Mohamed pay?

.....

.....

.....

b Round each number to the nearest 10, then find the result:

$154 + 156 \approx$ + =

.....

.....

.....

Unit 2 Addition and Subtraction Strategies

Concept 2.2 Solving Multistep Problems

Lessons 4&5

1 Solve the following equations:

Make a **bar model** and then find the solution.

a $x + 125 = 207$

Bar Model

Solution:

b $x + 514 = 1,025$

Bar Model

Solution:

c $2,087 + y = 7,248$

Bar Model

Solution:

d $69 + y = 1,200$

Bar Model

Solution:

e $m - 215 = 375$

Bar Model

Solution:

f $a - 258 = 915$

Bar Model

Solution:

g $542 - b = 289$

Bar Model

Solution:

h $845 - n = 457$

Bar Model

Solution:

i $k + 200 + 50 = 455$

Bar Model

Solution:

j $75 + r + 125 = 620$

Bar Model

Solution:

2 Read the following questions. Create an **equation** and a **bar model** for each problem and then find the solution.

- a** There are **1,200** ants in the colony. Some ants go out looking for food, while **700** ants dispose of the garbage outside the colony. How many ants are searching for food?

Equation:

Solution:

Bar Model

.....	
.....	

- b** There are **20,000** ants in the colony. **12,000** ants of them are females and the rest are males. How many male ants are there in the colony?

Equation:

Solution:

Bar Model

.....	
.....	

- c** There are **12,000** species of ants. **2,500** of these species live in Africa and the rest live in other parts of the world. How many species do not live in Africa?

Equation:

Solution:

Bar Model

.....	
.....	

- d** Tariq practiced walking. On Monday, Tariq walked a number of steps, then walked another **10,075** steps on Tuesday. Now, he walked a total of **78,200** steps. How many steps did he walk on Monday?

Equation:

Solution:

Bar Model

.....	
.....	

- e** A worker ant traveled **3,500** meters on Monday and then **2,450** meters on Tuesday to search for food. How far did the ant travel on Monday and Tuesday together?

Equation:

Solution:

Bar Model

.....	
.....	

- f The number of books in a school library is **890**, and the number of borrowed books is **258**. If the students return all borrowed books, how many books will be in the library?

Equation:

Solution:

Bar Model

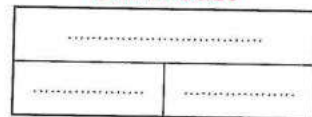


- g Mahmoud saved **250,000** piasters and got **39,000** piasters from his father. What is the sum of Mahmoud's money?

Equation:

Solution:

Bar Model



3 Read the following story problems.

Use the story problem solving steps.

- a The Suez Canal extends from Port Said to the city of Suez, and its length is **193,120** meters. If a boat travels **58,620** meters every day for two days, how many more meters will it have to travel to reach the end of the canal?
-
- b The population of Tanta is **404,901** people. The population of Banha is **167,029** people, and the population of Kafr Al-Dawwar is **67,370**. What is the population of Banha and Kafr Al-Dawwar together? And what is the difference between their population and Tanta's population?
-
- c Salma was counting the ants in a colony. She counted **1,525** ants on Monday, **19,750** ants on Tuesday, and **3,705** ants on Wednesday. If there are **30,520** ants in the colony, how many ants does she still need to count?
-
- d A local bakery sold **1,232** doughnuts in one day. If **876** doughnuts were sold in the morning, how many were sold during the rest of the day?
-

Accumulative Assessment

Up to Lesson 5

1 Choose the correct answer:

- a If $x + 32 = 105$, then $x =$ (137 or 73 or 173 or 37)
- b The **value** of the digit 4 in 74,025,739 is
(40,000 or 400,000 or 4,000,000 or 40,000,000)
- c Nine milliard, twenty thousand, fifty (**in standard form**) =
(9,020,000,050 or 9,000,020,050 or 9,000,200,500 or 925,000)
- d The equation that represents the opposite bar model
is

45	
w	30

 $(w + 30 = 45$ or $30 - w = 45$ or $w - 30 = 45$ or $w + 15 = 45)$
- e If $y - 12 = 25$, then $y =$ (13 or 12 or 37 or 300)
- f $(3 \times 1,000,000) + (2 \times 10,000) + (4 \times 10) =$ (**In standard form**)
(3,002,400 or 3,020,040 or 3,700,040 or 3,040,020)
- g 5,000 Millions = Millions. (5 or 50 or 500 or 5,000)

2 Create a **bar model** and an **equation** for each problem, then find the solution:

- a There are **56 students** in a class; **31** of them are boys.

What is the number of girls?

Equation:

Solution:

.....	
.....	

- b Nahla had **67 pounds** She spent **54 pounds** of them.

How much money is left with her?

Equation:

Solution:

.....	
.....	



Assessment on Concept 2

1 Choose the correct answer:

- a In the opposite bar model, $y =$

y	
47	65

(112 or 18 or 47 or 65)

- b If $21 - x = 7$, then $x =$

(28 or 21 or 14 or 7)

- c Which of the following bar models represents the equation: $93 - w = 42$?

<table><tr><td colspan="2">93</td></tr><tr><td>w</td><td>42</td></tr></table>	93		w	42	or	<table><tr><td colspan="2">15</td></tr><tr><td>32</td><td>w</td></tr></table>	15		32	w	or	<table><tr><td colspan="2">w</td></tr><tr><td>15</td><td>32</td></tr></table>	w		15	32	or	<table><tr><td colspan="2">42</td></tr><tr><td>93</td><td>w</td></tr></table>	42		93	w
93																						
w	42																					
15																						
32	w																					
w																						
15	32																					
42																						
93	w																					

- d The equation that represents the opposite bar model is

m	
25	31

($m = 31 - 25$ or $13 - m = 25$ or $25 - m = 31$ or $m = 25 + 31$)

2 Answer the following:

- a Hazem monitors an ant colony on a website that contains **132,890** ants. Menna monitors two ant colonies, one with **57,999** ants and the other with **57,024** ants. Who monitors more ants? And what is the difference?

.....

.....

- b The population of Matrouh is **429,999** people. North Sinai has a population of **474,401** people, and South Sinai has **108,951** people.

How much is the population of North Sinai and South Sinai together more than the population of Matrouh?

.....

.....

Unit 3 Concepts of Measurement

Concept 3.1 Metric Measurement

Lesson 1

1 Choose the **best unit** for measuring each of the following:

- a Insect length: (Kilometers or Meters or Centimeters or Millimeters)
- b Pencil length: (Kilometers or Meters or Centimeters or Millimeters)
- c Home height: (Kilometers or Meters or Centimeters or Millimeters)
- d The distance between Cairo and Tanta:
(Kilometers or Meters or Centimeters or Millimeters)
- e Ant length: (Kilometers or Meters or Centimeters or Millimeters)
- f A child's height:
(Kilometers or Meters or Centimeters or Millimeters)
- g The distance between your home and school:
(Kilometers or Meters or Centimeters or Millimeters)
- h School height:
(Kilometers or Meters or Centimeters or Millimeters)
- i Banana length:
(Kilometers or Meters or Centimeters or Millimeters)
- j Class length: (Kilometers or Meters or Centimeters or Millimeters)
- k Window width:
(Kilometers or Meters or Centimeters or Millimeters)

2 Complete each of the following tables:

a	Kilometer	Meter	b	Meter	Centimeter	c	Meter	Decimeter
	8	.....		2	.....		4	.....
	12	.....		15	.....		20	.....
	250	.....		258	.....		12	.....
	.....	2,000		.....	800		.....	60
	.....	30,000		.....	2,000		.....	200
	.....	650,000		.....	10,000		.....	150
	90	.....		20	.....		100	.....
	.....	600,000		.....	4,200		.....	10,000
	100	.....		1,000	.....		450	.....

3 Complete the following bar models to convert between lengths units:

a	 cm 5 m 25 cm	b	 cm 20 m 38 cm	c	 cm 30 m 5 cm
d	 m 8 km 550 m	e	 m 10 km 35 m	f	 m 20 km 7 m
g	574 cm m cm	h	7,050 cm m cm	i	60,250 cm m cm
j	1,258 m km m	k	20,240 m km m	l	65,005 m km m
m	405 cm dm cm	n	825 mm cm mm	o	220 cm m dm

4 Complete the following:

- a 7 m, 45 cm = cm
- b 9 m, 2 cm = cm
- c 20 m, 8 cm = cm
- d 50 m, 90 cm = cm
- e 8 km, 750 m = m
- f 80 km, 60 m = m
- g 40 km, 7 m = m
- h 5 m, 5 dm = dm
- i 6 cm, 7 mm = mm
- j 8 dm, 4 cm = cm
- k 860 cm = m, cm
- l 504 cm = m, cm
- m 5,065 cm = m, cm
- n 21,050 cm = m, cm
- o 2,745 m = km, m
- p 71,025 m = km, m
- q 12,500 m = km, m
- r 725 dm = m, dm
- s 108 mm = cm, mm
- t 155 cm = dm, cm

5 Choose the correct answer:

- a The best unit for measuring the **length** of an eraser is
(millimeters ☐ centimeters ☐ meters ☐ kilometers)
- b 70 m = cm (7 ☐ 700 ☐ 7,000 ☐ 7,000)
- c 8,000 m = km (8 ☐ 80 ☐ 800 ☐ 8,000)

d $50 \text{ km} + 20 \text{ m} = \dots\dots\dots \text{ m}$

(520 or 5,020 or 520,000 or 50,020)

e $50 \text{ m} + 5 \text{ dm} = \dots\dots\dots \text{ cm}$

(55 or 505 or 5,050 or 550)

f $30,000 \text{ dm} = \dots\dots\dots \text{ m}$

(3,000 or 300 or 30 or 3)

g $6,000 \text{ cm}$ 600 m

(< or = or > or ≥)

h $5,000 \text{ m}$ 50 km

(< or = or > or ≥)

i $2 \text{ m} + 25 \text{ cm}$ $22 \text{ dm} + 5 \text{ cm}$

(< or = or > or ≥)

- 6 When scientists poured cement into the ant colony and dug inside it, they found that the colony was **8 m** deep.

How many centimeters is the depth of the ant colony?

.....
.....

- 7 The ants in a colony transported soil while building their house, and this was done in **milliards** of trips. Each ant carried a portion of the soil to a kilometer to the surface.

If each ant could move **10** loads of soil in a week, how much is this in kilometers, meters, and centimeters?

..... km = m = cm.

- 8 The height of a school building is **25 m**. What is the height of the building in decimeters, centimeters, and millimeters?

$25 \text{ m} = \dots\dots\dots \text{ decimeters} = \dots\dots\dots \text{ centimeters} = \dots\dots\dots \text{ millimeters}.$

- 9 If one black ant can walk **250** meters in one hour, how many hours will it take to walk **1** kilometer?

.....
.....

Accumulative Assessment

Up to Lesson 1

1 Choose the correct answer:

- a The best unit for measuring the **length** of a school bus is
(meters ☐ or centimeters ☐ or kilometers ☐ or grams)
- b A **kilogram** is a measurement unit of the
(volume ☐ or height ☐ or mass ☐ or capacity)
- c 200,000 cm =
(2 km ☐ or 20 m ☐ or 200 dm ☐ or 200 mm)
- d A **liter** is a measurement unit of
(mass ☐ or volume ☐ or capacity ☐ or length)
- e 54,625 $\approx$
(To the nearest 100)
(54,630 ☐ or 54,600 ☐ or 54,700 ☐ or 54,620)
- f 9,570 cm =
(9 m and 57 cm ☐ or 9 m and 57 cm ☐ or 95 m and 70 cm ☐ or 95 m and 7 cm)

2 Answer the following:

a Complete using (<, =, or >):

- 1 4,589,465 4,958,456 2 4,500 cm 450 m
- 3 50,025 m 5 km, 25 m 4 $56 + 30$ $54 + 28$
- 5 $(5 \times 100,000,000) + (2 \times 100) + (7 \times 1)$ $500,000,000 + 200 + 7$

b Arrange the following numbers in an ascending order:

25 m , 1,500 cm , 2 km , 2,000 dm

..... , ,

c The distance between Samah's house and her school is 2 km. What is the distance in meters, decimeters, and centimeters?

2 km = m = dm = cm

Lesson 2

1 Choose the **best unit** for measuring the **mass** of each of the following (grams or kilograms or tons):

- a A book (.....) b A pen (.....)
 c A rabbit (.....) d A car (.....)
 e A ring (.....) f A container ship (.....)

2 Complete each of the following tables:

a

Kilogram	Gram
5	.....
70	.....
200	.....
.....	8,000
.....	12,000
.....	258,000

b

Gram	Kilogram
9,000	.....
30,000	.....
500,000	.....
.....	7
.....	34
.....	126

3 Complete the following bar models to **convert** between **mass units**:

a

..... grams	
5 kg	200 g

b

..... grams	
8 kg	7 g

c

..... grams	
15 kg	15 g

d

..... grams	
20 kg	200 g

e

3,250 grams	
..... kg	 g

f

60,024 grams	
..... kg	 g

g

200,060 gram	
..... kg	 g

h

10,006 grams	
..... kg	 g

4 Complete the following:

- | | | | | | |
|----------------|---------|-----------|----------------|---------|------|
| a 4 tons | = | kg | b 20 kg | = | g |
| c 300 kg | = | g | d 680 tons | = | kg |
| e 3,000 g | = | kg | f 90,000 grams | = | kg |
| g 600,000 g | = | kg | h 905,000 kg | = | tons |
| i 3,250 g | = | kg, | | | |
| j 24,120 g | = | kg, | | | |
| k 30,020 g | = | kg, | | | |
| l 300,008 g | = | kg, | | | |
| m 3 kg, 245 g | = | g | n 15 kg, 20 g | = | g |
| o 12 kg, 150 g | = | g | p 20 kg, 100 g | = | g |

5 Choose the correct answer:

- a A/An is a unit of mass measurement. (gram or meter or liter or hour)
- b A **gram** is the best unit for measuring the mass of a
(ring or child or car or chair)
- c 40 kilograms = g (40 or 400 or 4,000 or 40,000)
- d 200 tons = kg (200,000 or 20,000 or 2,000 or 20)
- e 60,000 kg = tons (6 or 60 or 600 or 6,000)
- f 3,000 grams = kg (3 or 30 or 300 or 3,000)
- g 20 kg, 50 g = g (250 or 250,000 or 2,050 or 20,050)
- h 10 tons, 300 kg = kg (130 or 10,300 or 1,300 or 103,000)

- 6 Hassan has a cow that weighs **125 kilograms** and **350 grams**.
Rewrite the weight in **grams**.

- 7 The total weight of all ants on Earth is equal to the total weight of all humans. One ant colony weighs **3,493 grams**. Rewrite this weight using **kilograms** and **grams**.

- 8 Ahmed bought **5 kilograms** and **200 grams** of oranges, and Adam bought **8 kilograms** of oranges. Rewrite these weights in **grams**, and then find the sum of the weight of what Ahmed and Adam bought.

Accumulative Assessment

Up to Lesson 2

1 Choose the correct answer:

a A is a unit of **mass** measurement.

(minute or kiloliter or kilometer or kilogram)

b A **kilogram** is the best unit for measuring the mass of a

(ruler or balloon or pencil or desk)

c 50,000 grams = kg (5 or 50 or 500 or 5,000)

d $30 \text{ kg} + 125 \text{ g} = \dots\dots\dots \text{ g}$ (3,125 or 31,250 or 30,125 or 3,025)

e $56,240 \text{ grams} = \dots\dots\dots \text{ kg}, \dots\dots\dots \text{ g}$

(56 kg, 24 g or 560 kg, 24 g or 56 kg, 240 g or 562 kg, 40 g)

2 Answer the following:

a Complete using (<, =, or >):

1 20 kg 2,000 g

2 The mass of a rabbit the mass of a car

3 2,500 dm 250 m

4 50 kg, 39 g 50,390 g

b Ahmed bought 4 kilograms and 300 grams of oranges, 3 kilograms of apples, and 900 grams of strawberries. Rewrite these weights in **grams**, and then find the sum of the weights of what Ahmed bought.

.....

Lesson 3

1 Choose the best unit for measuring the **capacity** of each of the following (**liters** or **milliliters**):

- a A **water cup** (.....)
- b A **swimming pool** (.....)
- c A spoon filled with **medicine** (.....)
- d A car's fuel **tank** (.....)
- e A family **juice box** (.....)
- f A perfume **bottle** (.....)

2 Complete each of the following tables:

a

Liter	Milliliter
5	.....
70	.....
800	.....
.....	3,000
.....	35,000
.....	143,000

b

Milliliter	Liter
2,000	.....
60,000	.....
900,000	.....
.....	7
.....	15
.....	221

3 Complete the bar models to **convert** between the following **capacity** units:

a

..... mL	
3 L	450 mL

b

..... mL	
4 L	70 mL

c

..... mL	
20 L	8 mL

d

..... mL	
12 L	500 mL

e

8,056 mL	
..... L	 mL

g

40,003 mL	
..... L	 mL

f

31,500 mL	
..... L	 mL

h

6,070 mL	
..... L	 mL

4 Complete the following:

- a 3 liters = milliliters
- b 50 liters = milliliters
- c 16 liters = milliliters
- d 20 liters = milliliters
- e 7,000 milliliters = liters
- f 80,000 milliliters = liters
- g 15,000 milliliters = liters
- h 200,000 milliliters = liters
- i 8,020 milliliters = liters, milliliters
- j 20,050 milliliters = liters, milliliters
- k 100,009 milliliters = liters, milliliters
- l 10,016 milliliters = liters, milliliters
- m 3 liters, 500 milliliters = milliliters
- n 20 liters, 40 milliliters = milliliters
- o 12 liters, 9 milliliters = milliliters

5 Choose the correct answer:

- a A is the best unit for measuring the **capacity** of a **cup of tea**.
(gram or milliliter or liter or centimeter)

- b A **liter** is a measurement unit of the
(weight or capacity or mass or length)

- c 20 liters = milliliters (200 or 2,000 or 20,000 or 200,000)
- d 100 liters = milliliters (100 or 1,000 or 10,000 or 100,000)
- e 5,000 milliliters = liters (5 or 50 or 500 or 5,000)
- f 300,000 milliliters = liters (3 or 30 or 300 or 3,000)
- g 45 liters + 45 milliliters = milliliters (4,545 or 45,450 or 45,045 or 495)
- h 60 liters + 6 milliliters = milliliters (606 or 60,006 or 60,060 or 66)

- 6 A fish tank can be filled with 50 liters of water. If the tank contains 35 liters and 130 milliliters:

– How much water do we need to fill the tank?

50 liters = milliliters

35 liters, 130 milliliters = milliliters

– Amount of water needed =

- 7 Essam has 4 liters and 250 milliliters of sunflower oil, and he also has one liter and 50 milliliters of corn oil.

– How much oil does Essam have?

4 liters, 250 milliliters = milliliters

1 Liter, 50 milliliters = milliliters

– Amount of oil =

- 8 A water tank contains 500 liters of water. A family used 125 liters and 500 milliliters on one day and used 250 liters and 600 milliliters the other day. How much water is left in the tank?

– Use the following bar model to solve:

500 liters = milliliters		
125 L, 500 mL = mL	250 L, 600 mL = mL	 mL

– Sum = mL.

– Amount of water left =

Accumulative Assessment

Up to Lesson 3

1 Choose the correct answer:

a 50 liters = milliliters (500 or 5,000 or 50,000 or 500,000)

b 14 liters, 14 milliliters = milliliters
(1,414 or 14,140 or 14,014 or 28)

c 50,000 milliliters 5 liters (< or = or > or ≥)

d 20,250 milliliters =
(20 L, 25 mL or 202 L, 50 mL or 20 L, 250 mL or 2 L, 25 mL)

e 2,050 millimeters =
(2 cm, 5 mm or 20 cm, 50 mm or 205 cm or 20 cm, 5 mm)

f If $x - 45 = 15$, then $x =$ (60 or 30 or 15 or 725)

g 50 kg, 20 grams =
(5,020 g or 50,020 g or 520 g or 500,020 g)

2 Answer the following:

a Find the result:

① $23,456 + 64,247 =$ ② $65,754 - 37,244 =$

③ $45,565 + 54,435 =$ ④ $80,000 - 24,000 =$

b Arrange the following numbers in a **descending** order:

500,500 , 5,500,000 , 500,005 , 5,050,000

..... , , ,

c A juice bottle contains **two** liters of juice. If Adel drinks **660** milliliters of it, how much juice remains in the bottle?

.....



Assessment on Concept 1

1 Choose the correct answer:

- a If a water tank contains **12** liters of water, the number of milliliters that the tank contains is mL.
(120 or 1,200 or 12,000 or 12)
- b A/An is the unit of measuring mass.
(liter or kilogram or hour or meter)
- c 6 meters and **20** centimeters = centimeters
(620 or 206 or 602 or 62)
- d 7,000 g = kg
(700 or 70 or 7 or 70,000)
- e 3 m + 30 cm = cm
(3,030 or 330 or 30,030 or 303)
- f 5,492 mL =
(54 L, 92 mL or 5 L, 492 mL or 549 L, 2 mL or 50 L, 492 mL)

2 Answer the following:

- a An ant walked **8** meters from the ant colony to search for food.
What is the distance traveled in centimeters?

.....

.....

.....

- b **One hundred** ants drink one liter of water.

How many milliliters of water do the ants drink?

.....

.....

.....

Unit ³ Concepts of Measurement

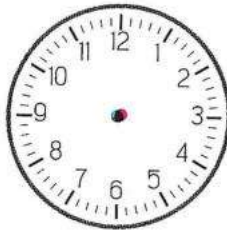
Concept 3.2 Measuring Time

Lessons 4&5

- 1 Write the time shown on the **digital clock** and draw the **hands** of the **analog clock**:

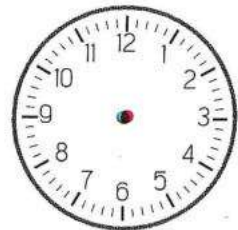
a

02:45



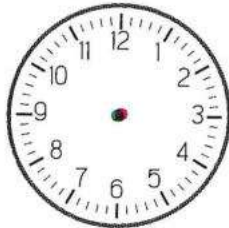
b

03:10



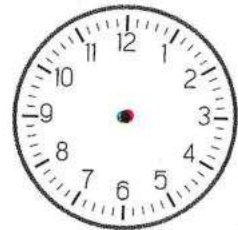
c

04:00



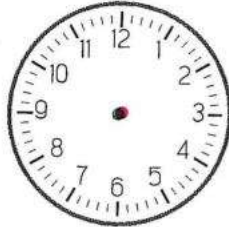
d

07:15



e

01:05



f

10:35



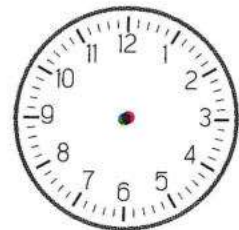
g

08:45



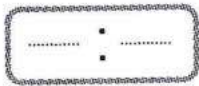
h

11:55

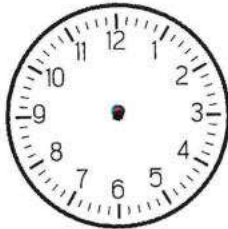


2 Represent the time shown on the **digital clock** and the **analog clock**:

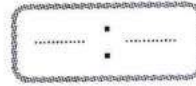
a



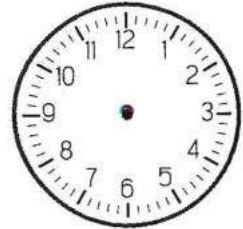
It's 20 past 9.



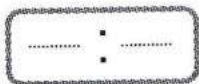
b



It's 25 past 8.



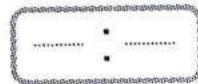
c



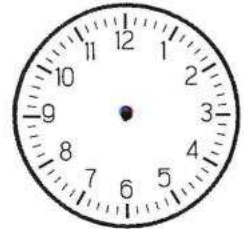
It's quarter to 6.



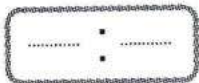
d



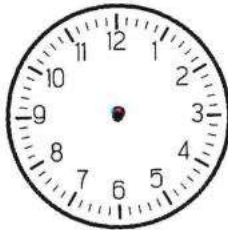
It's 5 to 3.



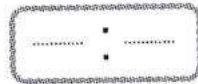
e



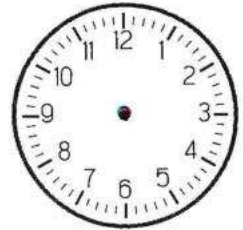
It's half past 1.



f

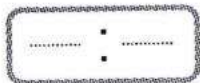


It's 10 to 8.



3 Write the time **shown** on the analog clock, then write it on the **digital clock**:

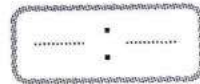
a



.....
.....



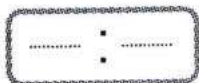
b



.....
.....



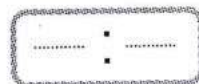
c



.....
.....



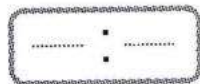
d



.....
.....



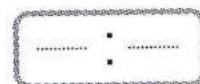
e



.....
.....



f



.....
.....



4 Complete the following tables:

a		b		c		d	
X 7		X 24		X 60		X 60	
Week	Day	Day	Hour	Hour	Minute	Minute	Second
1		1	.....	1	.....	1	.....
2		2	.....	2	.....	2	.....
3		3	.....	3	.....	3	.....
4		4	.....	4	.....	4	.....
5		5	.....	5	.....	5	.....
6		6	.....	6	.....	6	.....
7		7	.....	7	.....	7	.....
8		8	.....	8	.....	8	.....
9		9	.....	9	.....	9	.....
10		10	.....	10	.....	10	.....

5 Solve the following conversion problems using the previous tables:

- a One week and three days = days + days = days
- b 4 weeks and 5 days = days + days = days
- c 2 weeks and 6 days = days + days = days
- d 1 day and 8 hours = hours + hours = hours
- e 2 days and 20 hours = hours + hours = hours
- f 3 days and 10 hours = hours + hours = hours
- g 3 hours and 40 minutes = minutes + minutes = minutes

h 2 hours and 10 minutes = minutes + minutes = minutes

i 1 hour and 25 minutes = + = minutes

j 3 minutes and 50 seconds = seconds + seconds = seconds

k 10 minutes and 15 seconds = seconds + seconds = seconds

l 2 minutes and 3 seconds = seconds + seconds = seconds

6 Solve the following conversion problems using the previous **tables**:

a 25 days = weeks and days

b 36 days = weeks and days

c 48 days = weeks and days

d 29 hours = days and hours

e 60 hours = days and hours

f 250 hours = days and hours

g 95 minutes = hours and minutes

h 200 minutes = hours and minutes

i 560 minutes = hours and minutes

j 65 seconds = minutes and seconds

k 195 seconds = minutes and seconds

l 380 seconds = minutes and seconds

7 Find the result of each of the following:

a **Hours Minutes**

$$\begin{array}{r} 7 : 36 \\ + 3 : 15 \\ \hline \end{array}$$

$$+ 3 : 15$$

$$\text{.....} : \text{.....}$$

b **Hours Minutes**

$$\begin{array}{r} 2 : 27 \\ + 5 : 24 \\ \hline \end{array}$$

$$+ 5 : 24$$

$$\text{.....} : \text{.....}$$

c **Hours Minutes**

$$\begin{array}{r} 6 : 39 \\ + 2 : 50 \\ \hline \end{array}$$

$$+ 2 : 50$$

$$\text{.....} : \text{.....}$$

d **Hours Minutes**

$$\begin{array}{r} 4 : 35 \\ + 4 : 45 \\ \hline \end{array}$$

$$+ 4 : 45$$

$$\text{.....} : \text{.....}$$

Ⓔ Hours Minutes $\begin{array}{r} 5 : 47 \\ + 2 : 30 \\ \hline \end{array}$	Ⓕ Hours Minutes $\begin{array}{r} 2 : 38 \\ + 6 : 36 \\ \hline \end{array}$	Ⓗ Hours Minutes $\begin{array}{r} 6 : 49 \\ - 4 : 39 \\ \hline \end{array}$	Ⓖ Hours Minutes $\begin{array}{r} 10 : 50 \\ - 6 : 46 \\ \hline \end{array}$
Ⓙ Hours Minutes $\begin{array}{r} 7 : 20 \\ - 6 : 30 \\ \hline \end{array}$	⓫ Hours Minutes $\begin{array}{r} 4 : 00 \\ - 1 : 15 \\ \hline \end{array}$	Ⓚ Hours Minutes $\begin{array}{r} 4 : 05 \\ - 1 : 40 \\ \hline \end{array}$	Ⓛ Hours Minutes $\begin{array}{r} 11 : 15 \\ - 00 : 50 \\ \hline \end{array}$

Ⓜ $6:27 + 3:24 = \dots : \dots$

Ⓝ $2:25 + 4:45 = \dots : \dots$

Ⓞ $6:45 - 4:35 = \dots : \dots$

Ⓟ $8:24 + 1:36 = \dots : \dots$

Ⓠ $9:05 - 3:48 = \dots : \dots$

Ⓡ $8:10 - 7:40 = \dots : \dots$

- 8 Amir's family used their computer for **3** hours on Saturday, **3** hours on Sunday, and **5** hours on Monday.

How many minutes have they spent on the computer?

- 9 It takes Dahlia **2** hours and **15** minutes to drive to her grandmother's house. How many minutes does she take to drive there?

- 10 Farah was training for the marathon. Her goal was to run for **1** hour and **30** minutes. If she starts running at **8:35 a.m.**, when will she finish running?

- 11 The worker ants went out to find food for the colony. They left at **6:30 a.m.** and returned at **7:42 a.m.** How long did the worker ants take to search for food?

Accumulative Assessment

Up to Lesson 5

1 Choose the correct answer:

Ⓐ $(4 + 5) + 7 = 4 + (5 + 7)$ (..... Property)

(Associative or Identity Element or Commutative)

Ⓑ $(6 \times 10,000,000) + (6 \times 100)$ 6,600,000 ($<$ or $=$ or $>$)

Ⓒ 2 days and 2 hours = hours (26 or 122 or 50 or 860)

Ⓓ 20 km = meters (2 or 200 or 2,000 or 20,000)

Ⓔ $3:45 + 2:15 =$ (5:00 or 5:55 or 6:00 or 6:10)

Ⓕ 10 minutes and 10 seconds = seconds.
(20 or 110 or 610 or 6,100)

Ⓖ 39 days =
(3 weeks, 4 days or 4 weeks, 5 days or 5 weeks, 4 days or 5 weeks, 5 days)

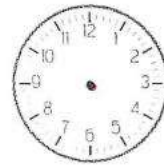
2 Answer the following:

Ⓐ Represent the time shown on the **analog clock** and **digital clock**:

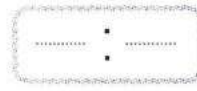
1 It's 10 past 4.



2 It's 10 to 8.



3 It's half past 2.

Ⓑ Salma trains to swim for **an hour** and **15 minutes**.If she starts training at **5:35**, when will Salma finish training?

Lessons 6&7

- 1 In a colony, the ants collect **950** grams of food. If the ants consumed **25** grams of food on Monday and **37** grams on Tuesday, how many grams of food are left?
-
-
- 2 Taher's height increased by **10** centimeters in **one** year. He is now **1** meter and **6** centimeters long. What was his height in **centimeters** one year ago?
-
-
- 3 An ant from a colony walked **two** kilometers in one day. An ant from another colony walked **3,000** meters in one day. What is the difference between them in **kilometers**?
-
-
- 4 Ali's cat weighs **7** kg and his dog weighs **17** kg. When Ali took them to the vet, he learned that his cat had gained **120** grams and his dog had gained **450** grams. What is the total weight of the two pets now?
-
-

- 5 Mr. Emad bought **four** bottles of soda, each with a capacity of **2** liters, for a picnic with the Fourth Grade students. At the end of the party, there were **2** liters and **829** milliliters of soda left. How many **milliliters** of soda did the students drink?
-
-
- 6 The worker ant takes short naps to replenish its energy for up to **250** minutes a day, while the queen ant can sleep for up to **9** hours a day. Which ant sleeps **longer**, and what is the difference between them?
-
-
- 7 Rania measures the length of two rows of ants. The row of ants in the first colony is **30** centimeters long. The length of the row of ants in the second colony is **500** mm. How long are the two rows of ants together in **centimeters**?
-
-
- 8 Dahlia's dog weighs **15** kilograms. When she took him to the vet, she knew that he had gained **2,000** grams. How many grams does Dahlia's dog need to weigh **20** kilograms?
-
-

- 9 Ms. Basma bought two cartons of milk, each of which weighs **two** liters. Her three children drank **1,200** milliliters on Monday, and **950** milliliters on Tuesday. How many milliliters of milk are left?
-
-
- 10 Ziad played video games from **3:45 p.m.** to **5:10 p.m.** He is only allowed to play video games for **80** minutes. Did he break the rule? If the answer is no, why? If yes, how many extra minutes did he play?
-
-
- 11 Ahmed has a **12-meter** long piece of wood. He wants to cut it into **3 equal lengths**. How long should each piece be in **meters**? What is the length of each piece in **centimeters**?
-
-
- 12 Amany likes swimming. She spends **half an hour** every day swimming. How many minutes does she spend swimming in **5** days?
-
-
- 13 Sarah walked **5,000** meters every day for **9** days. What is the total number of **kilometers** she walked?
-
-

- 14 Mary was on a picnic with her family, and she counted 10 ants walking together. If each ant weighs 1 gram and carries a weight 50 times its body weight, what is the total weight carried by the ant?

- 15 Ants walk about 5,000 meters every day.
How many kilometers do ants walk in 6 days?

- 16 Samira is studying for the next Math test. If Samira studies for 30 minutes a day, how many hours will she spend studying in 8 days?

- 17 In a colony of ants, ants eat approximately 2,000 grams of food every day. If the ants have 10 kg of food stored, how many days do the ants need to consume this amount of food?

- 18 An ant can walk up to 5 km per day. If an ant keeps walking for 20 days, what is the distance it will walk in meters?

Accumulative Assessment

Up to Lesson 7

1 Choose the correct answer:

- a Twenty million, two thousand 22,000,000 ($<$ or $=$ or $>$)
- b 6 hours = minutes (180 or 360 or 144 or 42)
- c 2,000 millions = thousands
(2,000,000,000 or 2,000,000 or 2,000 or 2)
- d $8 + 12 = 12 + 8$ (..... Property)
(Commutative or Associative or Neutral Element or Subtraction)
- e 3 days and 3 hours = hours (183 or 75 or 72 or 24)
- f 195 minutes =
(3 hr. and 15 min. or 1 hr. and 95 min. or 7 hr. and 3 min. or 4 hr. and 15 min.)
- g $5:12 - 3:50 =$: (9:02 or 2:38 or 1:22 or 2:22)

2 Answer the following:

a Match:

- | | | |
|--------------------|--------------|---|
| 1 2 days, 12 hours | • 60 days | a |
| 2 8 weeks, 4 days | • 60 minutes | b |
| 3 1 minute | • 60 hours | c |
| 4 1 hour | • 60 seconds | d |

b Arrange the following numbers in an ascending order:

195 min. , 2 hr. and 50 min. , 1 hr. and 90 min. , 3 hr.

..... , , ,



Assessment on Concept 2

1 Choose the correct answer:

Ⓐ $7:25 - 3:15 = \dots\dots\dots$

(7:00 or 4:40 or 4:10 or 10:40)

Ⓑ The time shown on the opposite clock is $\dots\dots\dots$

(5:10 or 4:00 or 1:03 or 3:05)



Ⓒ 2 hours and 10 minutes = $\dots\dots\dots$ minutes

(210 or 130 or 120 or 12)

Ⓓ 5 weeks and 3 days = $\dots\dots\dots$ days

(123 or 38 or 53 or 303)

Ⓔ 140 minutes = $\dots\dots\dots$

(2 hr. and 40 min. or 2 hr. and 20 min. or 1 hr. and 40 min. or 3 hr. and 20 min.)

Ⓕ $2:45 + 6:17 = \dots\dots\dots$

(8:08 or 9:02 or 8:22 or 9:22)

2 Answer the following:

Ⓐ Ahmed's cat weighs 3 kilograms and 400 grams, and Hisham's dog weighs 9 kilograms and 700 grams. What is the sum of the weights of the two pets?

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Ⓑ The height of the school building is 20 meters and 40 cm, and the tree adjacent to the school is 9 meters and 80 cm high. How much is the height of the school building greater than the height of the tree?

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Unit 4 Area and Perimeter

Concept 4.1

Explore Area and Perimeter

Lesson 1

- 1 Use **two different formulas** to find the **perimeter** of each of the following. Show your steps:

a First Formula =

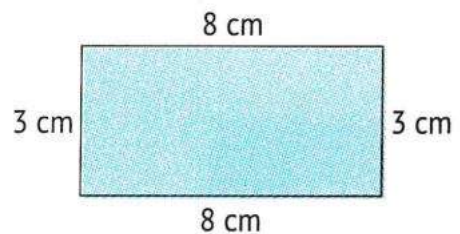
.....

.....

Second Formula =

.....

.....



b First Formula =

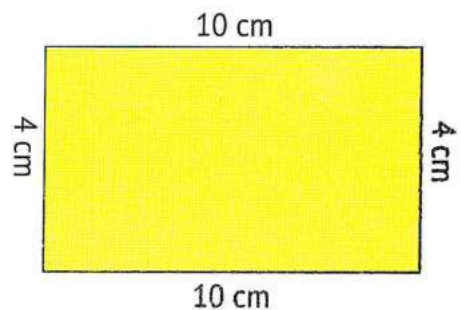
.....

.....

Second Formula =

.....

.....



c First Formula =

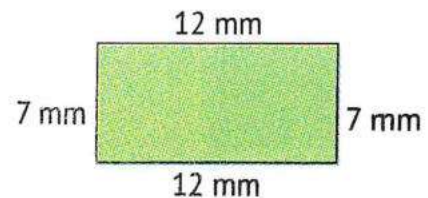
.....

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Second Formula =

.....

.....



① First Formula =

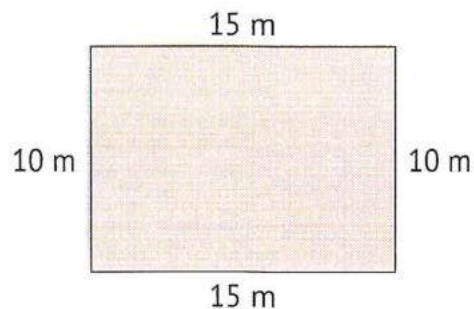
.....

.....

Second Formula =

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.....



② First Formula =

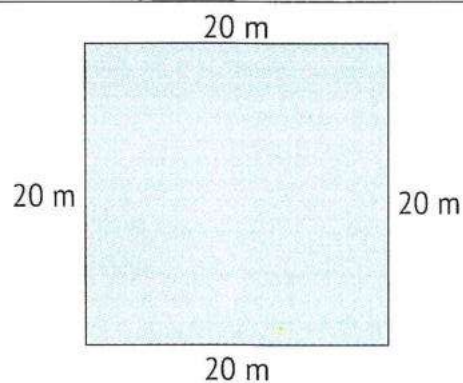
.....

.....

Second Formula =

.....

.....



③ First Formula =

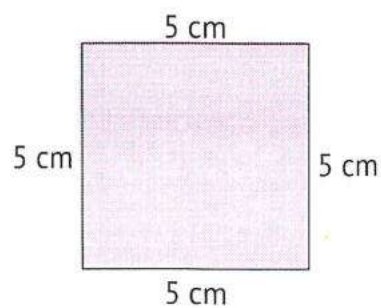
.....

.....

Second Formula =

.....

.....



④ First Formula =

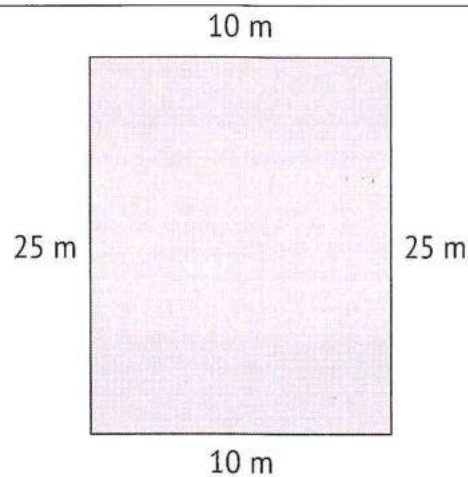
.....

.....

Second Formula =

.....

.....



h First Formula =

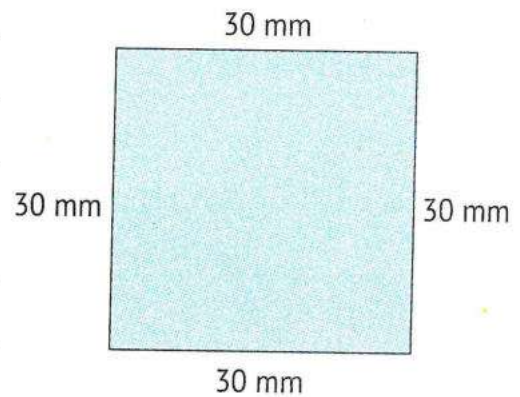
.....

.....

Second Formula =

.....

.....



2 Solve the following perimeter problems. For each problem, **sketch a rectangle** and record the **length** and **width** according to the problem:

a A window is in the shape of a rectangle, with a **60** cm length and a **40** cm width. Find the **perimeter** of the window.

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b A square table has a side length of **2** m.

What is the **perimeter** of the table?

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- c Kamal owns a rectangular farm. It is 20 meters long and 8 meters wide. What is the perimeter of this farm?

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- d A square picture has a side length of 30 cm. What is the perimeter of the frame for this picture?

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- e The football team wants to surround part of the field with ropes to play football. They need a space that is 105 meters long and 68 meters wide. What is the length of the rope they would need for this part of the field?

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- 3 Ahmed practiced walking around a playground. He walked a distance of **120 m**.

Draw **two different rectangles** that can represent his path.

Write the **length** and **width** on the drawing.

First Rectangle

Second Rectangle

- 4 Saleh owns a rectangular farm. The length of the fence surrounding the farm is **50 m**.

Draw **two different rectangles** that can represent the shape of the farm.

Write the **length** and **width** on the drawing.

First Rectangle

Second Rectangle

- 5 If a square has a side length of 12 cm, find its perimeter. Then, draw a rectangle with the same perimeter.

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- 6 If a square has a side length of 28 cm, find its perimeter. Then, draw a rectangle with the same perimeter.

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- 7 Sarah is drawing a line around a square cake. One side of the cake is 30 centimeters long. How long is the line drawn by Sarah?

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8 Complete the following:

- a Perimeter of the **rectangle**: $P = \dots + \dots + \dots + \dots$.
- b Perimeter of the **rectangle**: $P = (\dots + \dots) \times 2$
- c Perimeter of the **rectangle**: $P = (\dots \times 2) + (\dots \times 2)$
- d Perimeter of the **square**: $P = \dots \times \dots$.
- e If a rectangle has a length of **5** cm and a width of **3** cm, its perimeter is $\dots$.
- f If a rectangle of is **15** m long and **10** m wide, its perimeter is $\dots$.
- g If a square has a side length of **6** cm, its perimeter is $\dots$.
- h If a square has a side length of **20** mm, its perimeter is $\dots$.

9 Choose the correct answer:

- a Perimeter of the **rectangle** = $\dots$.
($P = L \times W$ or $P = L + (W \times 2)$ or $P = (L + W) \times (L + W)$ or $P = (L + W) \times 2$)
- b Perimeter of the **rectangle** = $\dots$.
($P = (L \times 2) + (W \times 2)$ or $P = (L + 2) \times (W + 2)$ or $P = (L \times W) \times 2$ or $P = L + W$)
- c Perimeter of the **rectangle** = $\dots$.
($P = L \times W$ or $P = L \times W \times L \times W$ or $P = L + W + L + W$ or $P = L \times W \times 2$)
- d A rectangle has a length of **7** cm and a width of **5** cm. Its perimeter is $\dots$ cm. (97 or 13 or 35 or 24)
- e If a rectangle has a length of **6** cm and a width of **8** cm, its perimeter is $\dots$ cm. (86 or 28 or 14 or 48)
- f If a square has a side length of **6** cm, its perimeter is $\dots$ cm. (24 or 36 or 18 or 22)
- g If a square has a side length of **10** cm, its perimeter is $\dots$ cm. (40 or 100 or 20 or 65)

Accumulative Assessment

Up to Lesson 1

1 Choose the correct answer:

- a 2,500 centimeters = meters (25 or 250 or 25,000 or 2,500)
- b A rectangle has a length of 7 cm and a width of 2 cm. Its perimeter is (14 or 16 or 18 or 28)
- c If a square has a side length of 20 mm, then its perimeter is:
P = mm. (400 or 100 or 80 or 40)
- d 45,000 milliliters = liters (4,500 or 450 or 45 or 450,000)
- e The perimeter of a rectangle with 40 cm length and 20 cm width
The perimeter a square with side length 30 cm ($<$ or $=$ or $>$)
- f 20 m and 35 cm + 2 m and 65 cm = (2,290 cm or 23 m or 2,211 cm or 203 m)

2 Answer the following:

a Find the result of each of the following:

- 1 $456,258 + 245,051 =$
- 2 $500,120 - 150,058 =$
- 3 $9\text{ m} - 324\text{ cm} =$
- 4 $10:00 - 3:37 =$

b Arrange the following numbers in a descending order:

4 m and 30 cm , 4,004 cm , 440 cm , 40 m and 30 cm

..... , , ,

c A painting is 5 meters in length and 2 meters in width. What is the perimeter of the necessary frame for this painting?

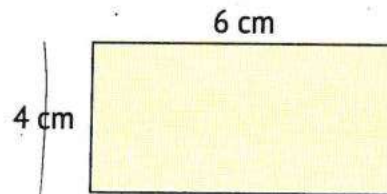
.....

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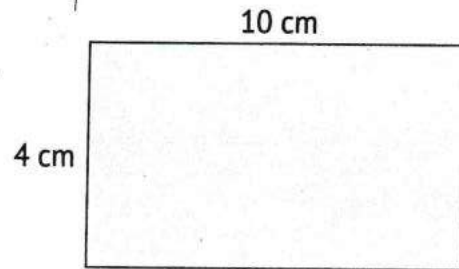
Lesson 2

1 Calculate the **area** of the following rectangles. Show your steps:

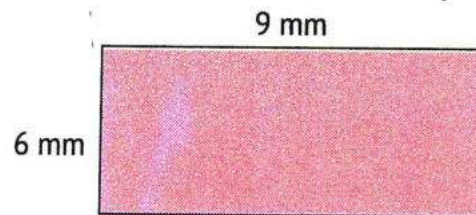
a Area = _____



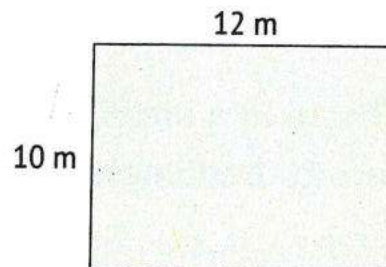
b Area = _____



c Area = _____



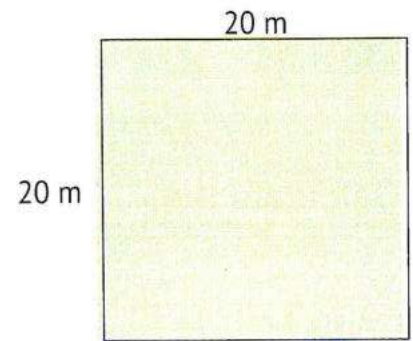
d Area = _____



Unit 4 | Area and Perimeter

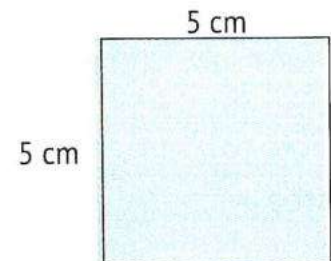
e Area =

.....
.....



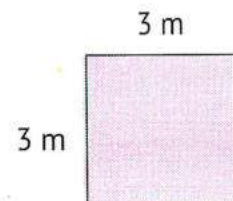
f Area =

.....
.....



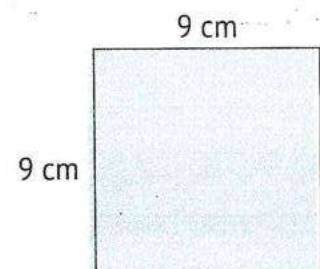
g Area =

.....
.....



h Area =

.....
.....



- 2 There is a small ant farm in the form of a **rectangle**. Its dimension are **20** centimeters and **8** centimeters. What is the **area** of this farm

Area =

.....

- 3 Jannat is designing a work of art and she needs **two** pieces of paper. Each piece must be **6** meters long and **2** meters wide. The two pieces of paper will be glued together at the two short edges. When she's finished with the artwork, she needs to frame it and hang it up. She needs to know the measurements of the frame.

What is the frame **size**?

Do you have to calculate the **area** or the **perimeter** to find this measurement?

- 4 You have **36** squares of rugs to be arranged on the floor in a **rectangular** form. Draw two possible arrangements with the measurements of the length and width. What is the **perimeter** of each arrangement? What is the **area** of each arrangement?

--	--

- 5 Draw two rectangles, each with an area of 18 cm^2 . Then, find the perimeter of each of them:

Perimeter =

Perimeter =

- 6 In a science project, two students are creating an ant farm enclosure, which is 5 meters long and two meters high. Draw the enclosure with the dimensions. Then, find the perimeter and area.

Perimeter =

Area =

- 7 A rectangular bakery has an area of 30 square meters. What could the perimeter of this bakery be? Draw a possible diagram for the bakery and write the dimensions.

Perimeter =

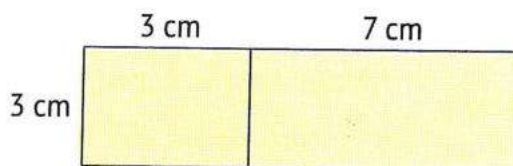
- 8 Draw a square with an area of 25 cm^2 .

Then, find its **perimeter**. Write the dimensions on the drawing.

- 9 Complete the following:

- a Area of the **rectangle**: $A = \dots\dots\dots$
- b Area of the **square**: $A = \dots\dots\dots$
- c A rectangle has a length of 9 cm and a width of 3 cm . Its perimeter is $\dots\dots\dots \text{ cm}$, and its area is $\dots\dots\dots \text{ cm}^2$.
- d If a rectangular piece of land has a length of 20 meters and a width of 10 meters , then its area is $\dots\dots\dots \text{ m}^2$.
- e In the opposite figure, there are two conjoined rectangles.
The sum of their **areas**:

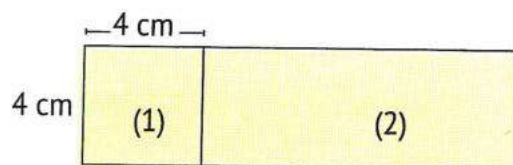
$\dots\dots\dots$
 $\dots\dots\dots$
 $\dots\dots\dots$



- 10 Choose the correct answer:

- a Area of the **rectangle**: $\dots\dots\dots$
 ($A = (L + W) \times 2$ or $A = L + W$ or $A = L - W$ or $A = L \times W$)
- b Area of the **square**: $\dots\dots\dots$
 ($A = S \times 4$ or $A = S \times 2$ or $A = S - S$ or $A = S \times S$)
- c If a square has sides of 7 mm , its surface area is $\dots\dots\dots \text{ mm}^2$.
 (14 or 49 or 28 or 36)
- d If a rectangle has a length of 8 cm and a width of 4 cm , then its surface area is $\dots\dots\dots \text{ cm}^2$.
 (32 or 12 or 24 or 84)
- e The total area of the opposite figure is 40 cm^2 . The area of rectangle (2)
 = $\dots\dots\dots \text{ cm}^2$.

(56 or 24 or 16 or 40)



Accumulative Assessment

Up to Lesson 2

1 Choose the correct answer:

- a If a square has a side length of 8 cm, then its area is cm^2 .
(88 or 32 or 64 or 16)
- b A rectangle has a length of 6 cm and a width of 3 cm. Its perimeter is
(36 cm^2 or 18 cm or 18 cm^2 or 9 cm^2)
- c 204,000 meters 20 km and 400 m (< or = or >)
- d If a rectangle is 10 cm long and 5 cm wide, then its area = cm^2 .
(30 or 50 or 60 or 100)
- e If a square has an area of 36 cm^2 , then the length of its side is cm.
(18 or 9 or 6 or 3)
- f 100,000 meters = kilometers.
(1 or 10 or 100 or 1,000)

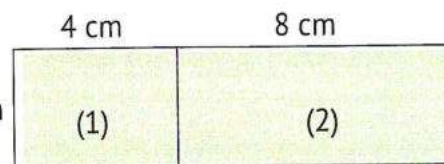
2 Answer the following:

a Complete using (<, =, or >):

- 1 3 m and 47 cm 3,047 cm
- 2 2 L and 33 mL 233 mL
- 3 4,000 kg 40,000 g
- 4 200 mm 2 meters

b Calculate the area and perimeter of the corresponding figure:

- 1 Area = 4 cm
- 2 Perimeter =



- c In a company, a piece of glass is cut to cover the top of a dining table. The table is 80 cm by 90 cm. What is the area of the piece of glass needed for this table?
-

Lesson 3

1 Complete the following table:

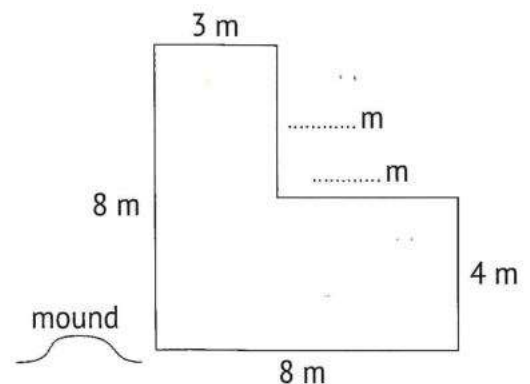
	Length of the Rectangle	Width of the Rectangle	Perimeter	Area
a	8 cm	5 cm	..... .....	..... .....
b	..... .....	4 m	20 m	..... .....
c	..... .....	7 m	30 m	..... .....
d	15 mm	..... .....	50 mm	..... .....
e	20 mm	..... .....	60 mm	..... .....
f	..... .....	6 cm	..... .....	42 cm ²
g	..... .....	7 cm	..... .....	63 cm ²
h	6 dm	..... .....	..... .....	24 dm ²
i	8 dm	..... .....	..... .....	40 dm ²

2 Complete the following table:

	Side Length of the Square	Perimeter	Area
a	4 cm	..... .....	..... .....
b	7 cm	..... .....	..... .....
c	..... .....	32 m	..... .....
d	..... .....	20 m	..... .....
e	..... .....	..... .....	36 mm ²
f	..... .....	..... .....	81 mm ²

- 3 Some fire ants left their mound to search for food. They walked 8 meters east, then turned and walked 4 meters north. After finding a big tree, they walked around it. Once past the tree, they turned west and walked 3 more meters, then headed 8 meters south to return home. See their path in the diagram and label the missing measurements. How many meters in total did they walk? What is the area of the shape?

.....
.....
.....
.....
.....



- 4 Tahani wants to put a **square** frame around her father's picture. The area of the picture that she wants to frame is **100** square centimeters. What is the **width** and **length** of the frame?

Draw the frame and show your steps.

.....

.....

.....

.....

.....

- 5 Soliman works at a farm. The fence around the goats fell off, so his uncle asked him for more wires to build a new fence.

He told him that the fence is **25** meters wide and that he needed to get **110** meters of wire to encircle the entire space.

What is the length of the **unknown side**? Draw the fence and find the **unknown length**.

.....

.....

.....

.....

- 6 A **rectangular** mirror has an area of **1,200** square centimeters. The mirror is **40** cm long. What's its **width**?

.....

.....

- 7 Sameh's book is **30** cm long. The cover of Sameh's book has a perimeter of **100** cm. What is Sameh's book **width**?

.....

.....

8 Choose the correct answer:

- a If a rectangle has a perimeter of 60 cm and a length of 20 cm, its width is cm. (3 or 10 or 40 or 50)
- b If a rectangle has an area of 30 cm² and a width of 5 cm, then its length is cm. (35 or 6 or 9 or 25)
- c A square has a perimeter of 20 cm; the length of its side is cm. (5 or 4 or 10 or 7)
- d A square has an area of 36 cm²; the length of its side is cm. (5 or 9 or 4 or 6)
- e If a square has a perimeter of 12 cm, then its area is cm². (48 or 9 or 36 or 144)
- f If a square has an area of 25 cm², its perimeter is cm. (5 or 20 or 100 or 32)

9 Complete the following:

- a If a rectangle has a perimeter of 40 cm and a length of 12 cm, then its width is cm.
- b If a rectangle has an area of 45 cm² and a width of 5 cm, its length is cm.
- c If a rectangle has a perimeter of 28 cm and a length of 8 cm, then its area is cm².
- d If a rectangle has an area of 32 cm² and a width of 4 cm, then its perimeter is cm.
- e A square has a perimeter of 16 cm; the length of its side is cm.
- f A square has an area of 49 cm²; the length of its side is cm.
- g If a square has a perimeter of 40 cm, then its area is cm².
- h A square has an area of 36 cm²; its perimeter is cm.

Accumulative Assessment

Up to Lesson 3

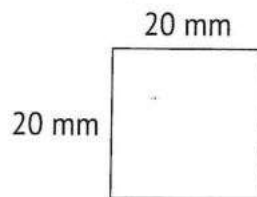
1 Choose the correct answer:

- a If a square has a perimeter of 12 cm, then its area is cm².
(21 or 3 or 9 or 24)
- b $25,452 \approx 30,000$ (Rounded to the nearest)
(1,000 or 10,000 or 100,000 or 1,000,000)
- c The best unit for measuring the **height** of a **school** is
(kilometers or meters or centimeters or millimeters)
- d If a rectangle has an area of 36 cm² and a width of 4 cm, then its perimeter is cm.
(13 or 14 or 18 or 26)
- e $5,065 \text{ cm} = \dots\dots\dots$.
(50 m and 65 cm or 5 m and 65 cm or 506 m and 5 cm or 500 m and 65 cm)
- f If $x + 245 = 786$, then $x = \dots\dots\dots$. (1,031 or 541 or 931 or 441)

2 Answer the following:

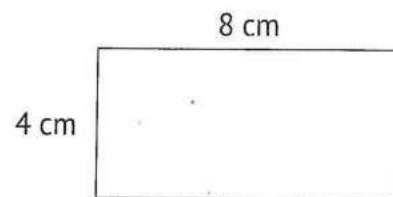
- a Calculate the **perimeter** and **area** of each of the following shapes:

1



.....
.....

2



.....
.....

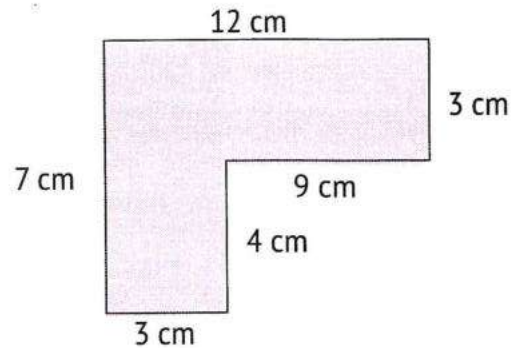
- b A city is in the shape of a **rectangle**. It is 4 kilometers wide and 8 kilometers long. What is the **area** of this city?

.....

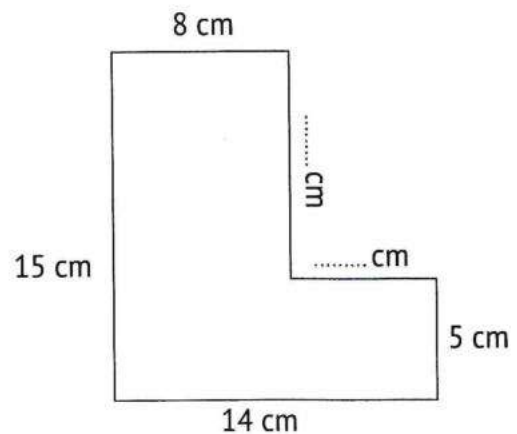
Lesson 4

- 1 Divide each of the following shapes into rectangles or smaller squares, and then calculate the perimeter and area of the corresponding figure:

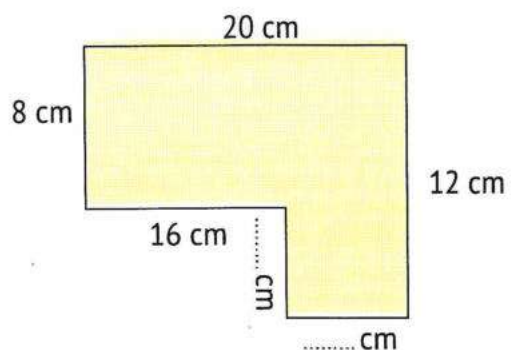
a



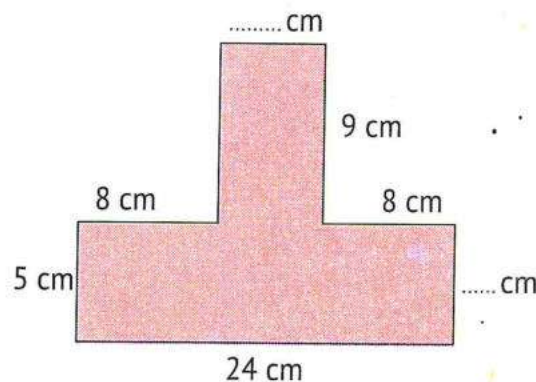
b



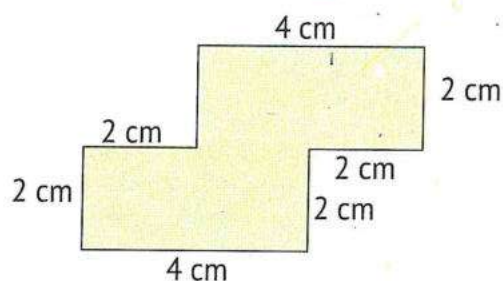
c



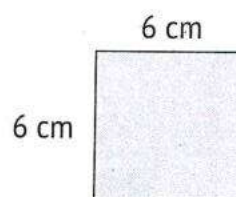
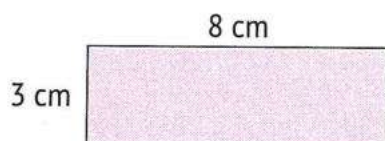
d



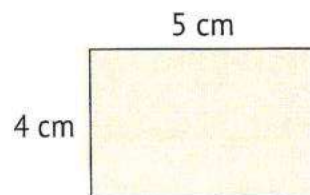
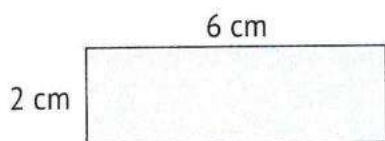
e



- 2 Combine the following two geometric shapes to form **one odd** shape. Calculate the **area** and **perimeter** of this shape. Draw your geometric figure and write the measurements on the sides.



- 3 Combine the following two geometric shapes to form **one odd** shape. Calculate the **area** and **perimeter** of this shape. Draw your geometric figure and write the measurements on the sides.



في
اللغة
العربية
للمف الرابع الابتدائي

احرص
على اقتناء كتاب
الأستاذ

Accumulative Assessment

Up to Lesson 4

1 Choose the correct answer:

- a $2 \text{ km} + 50 \text{ m} = \dots\dots\dots \text{ m}$ (53 or 250 or 2,500 or 2,050)
- b $45 + 35 = \dots\dots\dots - 45$ (35 or 80 or 145 or 125)
- c $50 \text{ m} + 5 \text{ dm} = \dots\dots\dots \text{ cm}$ (505 or 5,050 or 550 or 55)
- d A **kilogram** is a measuring unit of $\dots\dots\dots$.
(length or mass or capacity or time)
- e A rectangle has an area of **30** cm^2 and a length of **10** cm. Then, its perimeter is $\dots\dots\dots$ cm. (30 or 26 or 52 or 80)
- f $120 \text{ hours} = \dots\dots\dots$ days (2 or 5 or 12 or 24)
- g A square has a perimeter of **80** mm. Its area is $\dots\dots\dots \text{ cm}^2$. (400 or 40 or 4 or 8)

2 Calculate the **area** and **perimeter** of the following shape:

.....

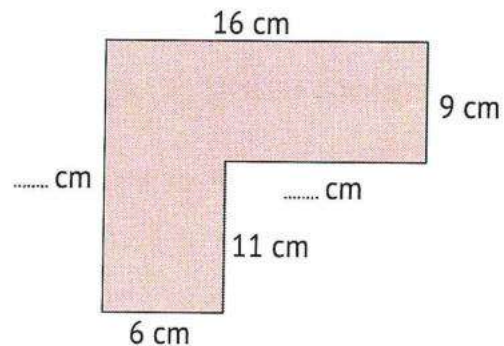
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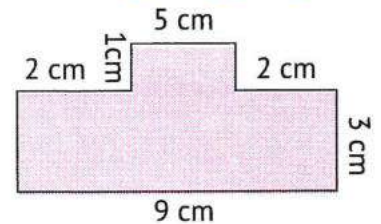




Assessment on Concept 1

1 Choose the correct answer:

- a The **perimeter** of a square with a side length of 5 cm is cm.
(10 or 15 or 25 or 20)
- b The **area** of a rectangle with dimensions 7 cm and 2 cm is cm^2 .
(27 or 18 or 9 or 14)
- c The perimeter of the opposite figure is cm.
(36 or 26 or 21 or 13)
- d The length of a rectangle is 3 times its width. If its width is 6 m, then its length is m.
(9 or 12 or 18 or 24)
- e If the area of a square is 49 m^2 , then its perimeter is m.
(49 or 36 or 28 or 14)



2 Complete using (<, =, or >):

- a The perimeter of a rectangle with a length of 6 cm and a width of 4 cm The perimeter of a square with a side length of 6 cm
- b The side length of a square with a perimeter of 36 cm The side length of a square with an area of 25 cm^2
- c The area of a square with a side length of 4 cm The area of a rectangle with dimensions 9 cm and 3 cm

Theme

2

Mathematical Operations and Algebraic Thinking

Theme Units 

Unit

5

Multiplication as a Relationship

Concept 5.1: Multiplicative Comparisons

Concept 5.2: Properties and Patterns of Multiplication

Unit

6

Factors and Multiples

Concept 6.1: Understanding Factors

Concept 6.2: Understanding Multiples

Unit

7

Multiplication and Division: Computation and Relationships

Concept 7.1: Multiplying by 1-Digit and 2-Digit Factors

Concept 7.2: Dividing by 1-Digit Divisors

Unit

8

Order of Operations

Concept 8.1: Order of Operations

Unit ⁵ Multiplication as a Relationship

Concept 5.1 Multiplicative Comparisons

Lessons 1–3

1 Write **equations** for the following comparisons. Use a **symbol "letter"** to represent the **unknown number**:

a 5 times greater than 3 is Equation:

b 7 times more than 6 is Equation:

c 3 times as many as 8 is Equation:

d is 4 times as many as 9. Equation:

e is 2 times more than 6. Equation:

f is 5 times greater than 7. Equation:

g 28 is 7 times greater than Equation:

h 35 is 5 times more than Equation:

i 48 is 6 times as many as Equation:

j 49 is times as many as 7. Equation:

k 64 is times as many as 8. Equation:

l 42 is times as many as 6. Equation:

2 Write the **multiplication equation** that represents each of the following sentences. Use a **letter** to represent the **unknown number**:

a Ahmed's age is **three times** Maha's age. If Maha is 5 years old, how old is Ahmed?

.....
.....

- b A square has sides of 3 cm.

Write an equation to show the **perimeter** of the square (P).

.....

.....

- c A rectangle is of 6 cm length and 4 cm width.

Write an equation that shows the **area** of the rectangle (A).

.....

.....

- d Hazem has **five times** the money that Karim has.

If Hazem has 45 pounds, what is the amount of money that Karim has?

.....

.....

- e If the price of one pen is 3 pounds, what is the price of 7 pens?

.....

.....

3 Find the value of the **unknown** in each of the following equations.

Solve the equations:

a $x \times 5 = 35$, $x =$

b $y \times 8 = 48$, $y =$

c $m \times 9 = 45$, $m =$

d $6d = 30$, $d =$

e $7n = 14$, $n =$

f $9a = 54$, $a =$

g $e = 8 \times 6$, $e =$

h $k = 3 \times 6$, $k =$

i $q = 6 \times 4$, $q =$

j $s = 5 \times 2$, $s =$

4 Write **equations** for the following comparisons. Use **letters** to represent the **unknowns**, then find their values:

a What number is **6** times more than **3**? Equation :

Answer :

b What number is **7** times as many as **5**? Equation :

Answer :

c What number is **3** times more than **8**? Equation :

Answer :

d What number is **5** times greater than **9**? Equation :

Answer :

e **45** is **9** times greater than what number? Equation :

Answer :

f **40** is **5** times more than what number? Equation :

Answer :

g **12** is **3** times as many as what number? Equation :

Answer :

h **21** is **7** times as many as what number? Equation :

Answer :

5 Complete the following:

a The equation that represents "**24** is **3 times** more than a number" is

b The equation that represents "**54** is **9 times** greater than a number" is

c The equation that represents "a number is **5 times** as many as **2**" is

- d The equation that represents "a number is **7 times** greater than **3**"

is

- e If $3x = 18$, then $x =$

- f If $6y = 42$, then $y =$

- g If $28 = 4 \times m$, then $m =$

- h If $a = 6 \times 9$, then $a =$

- 6 Read the story problems and think about the comparisons, then write the **multiplication equation** that represents each problem:

Use a **letter** to represent the **unknown number**. Then solve the equation:

- a Rashad's team scored **9** goals in football. This is **3 times** greater than the number of goals scored by Yassin's team.

How many goals did Yassin's team score?

Equation :

Answer :

- b Wafaa has **18 pounds**. This is equal to **3 times** more than what Hana has.

How many pounds does Hana have?

Equation :

Answer :

- c Saleh has **15 apples**, and his sister Hala has **5 apples**.

How many times more apples does Saleh have than Hala?

Equation :

Answer :

- d The height of a residential tower is **36** meters, and the height of a tree is **6** meters. How many times is the height of the residential tower as the height of the tree? Equation :

Answer :

- e Hani is **twice** as old as his brother.
If his brother is **8** years old, how old is Hani? Equation :

Answer :

- f The distance from Samir's house to the bank is **5 times** the distance from his house to the museum. If his house is **20** kilometers from the museum, how many kilometers is his house from the bank?

Equation :

Answer :

7 Choose the correct answer:

- a Sameh is **three times** the age of his brother. His brother is **4** years old.
Which of the following equations is used to know the age of Sameh?

..... ($a = 4 \div 3$ or $a = 3 + 4$ or $a = 4 - 3$ or $a = 3 \times 4$)

- b Sarah and her sister peeled some oranges. Sarah peeled **6** oranges.
Sarah's sister peeled **3 times** as many oranges as Sarah. Which of the following equations can be solved to find the number of oranges that Sarah's sister peeled?

..... ($n \times 3 = 6$ or $n = 3 \times 6$ or $n = 6 \div 3$ or $n = 6 + 3$)

- c An aquarium contains **5** red fish and **3 times** as many blue fish.
How many blue fish are in the tank?

(53 or 15 or 8 or 2)

- d If $3x = 9$, then $x =$

(3 or 27 or 12 or 6)

- e If $6 \times y = 24$, then $y =$

(8 or 18 or 30 or 4)

- f The equation " $m = 4 \times 2$ " represents a number equal to

(4 times more than 2 or 4 times more than 4 or

2 times more than 2 or 8 times more than 4)

Accumulative Assessment

Up to Lesson 3

1 Choose the correct answer:

a If $6 \times m = 18$, then **18** is times as many as **m**. (3 or 6 or 2 or 18)

b A square with side length **S** and perimeter **P**, the equation that represents the perimeter is

($P = S + S$ or $P = S \times S$ or $P = S + 4$ or $P = 4 \times S$)

c A square has an area of **36** cm^2 , then its perimeter is

(9 or 24 or 12 or 81)

d The value of the digit 5 in the **Hundred Millions** place is

(500,000 or 50,000,000 or 500,000,000 or 5,000,000)

e If 24 is **six times a**, then

($6 \times a = 24$ or $4 \times a = 24$ or $a = 6 \times 24$ or $a = 4 \times 24$)

f $16 + 35 = \dots + 16$

(41 or 36 or 16 or 19)

g If $45 = 9 \times u$, then 45 is times more than **u**. (9 or 6 or 5 or 4)

2 Answer the following:

a Arrange the following numbers in an **ascending** order:

3,004 dm , 30,050 cm , 40 m , 30 m and 50 cm

b Write an **equation** to compare each of the following:

1 12 and 4 Equation:

2 20 and 5 Equation:

3 16 and 8 Equation:

4 54 and 9 Equation:



Assessment on Concept 1

1 Choose the correct answer:

- a If 24 is 8 times more than a number, then this number is
(5 or 3 or 8 or 2)
- b is 5 times greater than 7. (14 or 35 or 21 or 28)
- c The age of Kenzy is 3 times as the age of Retaj. If Retaj is 6 years old, then the equation represents the age of Kenzy.
($3 + 3 + 3$ or $b \times b = 3$ or $3 \times 6 = b$ or $3 \times b = 6$)
- d The equation of "a number is 3 times more than 9" is
($x = 3 \times 9$ or $x \times 3 = 9$ or $9 \div x = 3$ or $x = 9 \div 3$)
- e Ahmed has 4 apples, and his friend has 36 apples. The number of apples with Ahmed's friend is times more than what Ahmed has.
(4 or 6 or 9 or 12)
- f 16 is times greater than 2. (2 or 4 or 6 or 8)

2 Answer the following:

- a Fouad is 56 years old, which is 7 times the age of his grandson Ahmed. How old is Ahmed? Write an equation representing this comparison and then solve it.

Equation:

Solution:

- b Find the value of the unknown:

1 If $c \times 8 = 32$, then $c =$

2 If $a = 9 \times 5$, then $a =$

Unit ⁵ Multiplication as a Relationship

Concept 5.2 Properties and Patterns of Multiplication

Lessons 4&5

1 Find the product of each of the following:

a $5 \times 1 =$

b $1 \times 6 =$

c $9 \times 0 =$

d $0 \times 9 =$

e $4 \times 10 =$

f $6 \times 100 =$

g $7 \times 1,000 =$

h $12 \times 20 =$

i $15 \times 100 =$

j $12 \times 10,000 =$

k $564 \times 1,000 =$

2 Complete the following:

a $8 \times \dots = 3 \times 8$

b $9 \times 7 = \dots \times 9$

c $\dots \times 2 = 2 \times 6$

d $12 \times 6 = 6 \times \dots$

e $\dots \times 1 = 9$

f $1 \times \dots = 4$

g $7 \times \dots = 0$

h $\dots \times 5 = 0$

i $\dots \times 10 = 80$

j $5 \times \dots = 500$

k $\dots \times 1,000 = 9,000$

l $\dots \times 10 = 400$

m $\dots \times 100 = 1,700$

n $48 \times \dots = 48,000$

o $120 \times \dots = 120,000$

3 Complete using (<, =, or >):

a 6×1 5×1

b 9×0 8×0

c 3×1 0×7

d 40×2 4×20

4 Find the value of the unknown (x) in each of the following:

- a If $x \times 10 = 200$, then $x =$
- b If $30 \times x = 6,000$, then $x =$
- c If $x \times 500 = 20,000$, then $x =$
- d If $x \times 7 = 7 \times 9$, then $x =$
- e If $60 \times 30 = 30 \times x$, then $x =$
- f If $200 \times x = 100,000$, then $x =$

5 The length of an ant is about 2 mm. If the length of the turtle is 100 times the length of the ant, find the length of the turtle.

.....

6 Ahmed saves 200 pounds every month. How much will he save after six months?

.....

7 The price of one pen is 90 piasters. How much are 20 pens?

.....

8 The bookcase in a library contains 5 shelves; each shelf has 30 books. How many books are there in the bookcase?

.....

9 Alia has 12 marbles. Write an equation using the Commutative Property of Multiplication to describe two ways in which the marbles can be arranged.

.....

10 Saleem has 24 erasers. Write an equation using the Commutative Property of Multiplication to describe two ways in which he can arrange the erasers.

.....

Accumulative Assessment

Up to Lesson 5

1 Choose the correct answer:

- a $50 \times \dots = 2,000$ (4 or 40 or 400 or 4,000)
- b If $a \times 6 = 24$, then $a = \dots$ (30 or 4 or 6 or 24)
- c The equation that shows "48 is **six times** greater than m " is $\dots$
 $(8 + m = 48 \text{ or } 8 \times m = 48 \text{ or } 48 \times m = 6 \text{ or } 6 \times m = 48)$
- d $80 + 0 + 0 + 0 + 5 = \dots$ (800,005 or 805 or 85 or 8,005)
- e $60 \times 5,000 = \dots$ (30,000 or 300,000 or 3,000,000 or 30,000,000)
- f $8 \times \dots = 8$ (0 or 1 or 10 or 2)

2 Answer the following:

- a Find the result of each of the following:

① If $9 + x = 15$, then $x = \dots$

② If $3 \times n = 18$, then $n = \dots$

③ $80 \times 50 = \dots$

④ $30 \times 1,000 = \dots$

- b The height of a tree is 2 meters, and the height of a residential building is 10 times the height of the tree.

How high is the residential building?

.....

.....

Lessons 6&7

1 Find using the **Associative Property of Multiplication**:

- a $6 \times 2 \times 10 = (\dots \times \dots) \times \dots = \dots \times \dots = \dots$
- b $5 \times 4 \times 6 = (\dots \times \dots) \times \dots = \dots \times \dots = \dots$
- c $8 \times 5 \times 5 = (\dots \times \dots) \times \dots = \dots \times \dots = \dots$
- d $10 \times 6 \times 8 = (\dots \times \dots) \times \dots = \dots \times \dots = \dots$
- e $8 \times 6 \times 5 = \dots \times (\dots \times \dots) = \dots \times \dots = \dots$
- f $10 \times 6 \times 9 = \dots \times (\dots \times \dots) = \dots \times \dots = \dots$
- g $5 \times 2 \times 10 = \dots \times (\dots \times \dots) = \dots \times \dots = \dots$
- h $8 \times 10 \times 10 = \dots \times (\dots \times \dots) = \dots \times \dots = \dots$

2 Complete the following:

- a $(2 \times \dots) \times 8 = \dots \times (7 \times 8)$
- b $(7 \times \dots) \times 2 = \dots \times (9 \times 2)$
- c $(\dots \times 4) \times 8 = 2 \times (4 \times \dots)$
- d $(\dots \times 3) \times 10 = 7 \times (3 \times \dots)$
- e $(12 \times 5) \times \dots = \dots \times (5 \times 20)$
- f $(8 \times 10) \times \dots = \dots \times (10 \times 2)$
- g $(35 \times \dots) \times 9 = \dots \times (22 \times 9)$
- h $(25 \times \dots) \times 16 = \dots \times (18 \times 16)$

3 Complete the following:

- | | |
|----------------------------|-------------------------------|
| a $6 \times \dots = 600$ | b $\dots \times 5 = 2,000$ |
| c $8 \times \dots = 400$ | d $\dots \times 100 = 10,000$ |
| e $40 \times \dots = 200$ | f $9 \times \dots = 36,000$ |
| g $5,000 = \dots$ Hundreds | h $200 = \dots$ Hundreds |
| i $6,000 = \dots$ Tens | j $\dots = 20$ Thousands |
| k $\dots = 400$ Hundreds | l $\dots = 5,000$ Tens |

4 Use decomposing a number into its factors and the Associative Property of Multiplication to solve each of the following:

- a $6 \times 20 = 6 \times (\dots \times \dots) = (6 \times \dots) \times \dots = \dots \times \dots = \dots$
- b $9 \times 200 = \dots \times (2 \times \dots) = (\dots \times \dots) \times \dots = \dots \times \dots = \dots$
- c $7 \times 3,000 = \dots \times (\dots \times 1,000) = (\dots \times \dots) \times \dots = \dots \times \dots = \dots$
- d $2 \times \dots = \dots \times (8 \times 10) = (\dots \times \dots) \times \dots = \dots \times \dots = \dots$
- e $\dots \times \dots = 3 \times (5 \times 10) = (\dots \times \dots) \times \dots = \dots \times \dots = \dots$
- f $9 \times \dots = \dots \times (\dots \times 100) = (\dots \times 5) \times \dots = 45 \times 100 = \dots$
- g $\dots \times 2,000 = \dots \times (\dots \times 1,000) = (8 \times \dots) \times \dots = 16 \times 1,000 = \dots$
- h $3 \times 70 = \dots$
- i $9 \times 80 = \dots$
- j $6 \times 300 = \dots$
- k $8 \times 700 = \dots$
- l $9 \times 3,000 = \dots$
- m $3 \times 2,000 = \dots$

5 Complete the following:

- a $7 \times 50 = 35 \times \dots$
- b $6 \times 300 = 18 \times \dots$
- c $\dots \times 60 = 24 \times 10$
- d $\dots \times 200 = 12 \times 100$
- e $9 \times \dots = 45 \times 10$
- f $8 \times \dots = 24 \times 100$
- g $2 \times 60 = \dots \times 10$
- h $4 \times 8,000 = \dots \times 1,000$
- i $(8 \times 5) \times 6 = \dots \times 6 = \dots$
- j $(3 \times 2) \times 20 = 6 \times \dots = \dots$
- k $(6 \times 20) \times 10 = \dots \times \dots = \dots$
- l $(\dots \times 3) \times 9 = 6 \times \dots = \dots$
- m $(\dots \times 10) \times 4 = 80 \times \dots = \dots$
- n $(5 \times 6) \times \dots = \dots \times 20 = \dots$

6 Choose the correct answer:

a $7 \times (3 \times 5) = (\dots \times 3) \times 5$

(21 or 7 or 5 or 3)

b $(8 \times 2) \times 10 = \dots \times 10$

(20 or 8 or 2 or 16)

c $5 \times 50 = \dots \times 10$

(5 or 25 or 10 or 250)

d $30 \times 40 = 12 \times \dots$

(34 or 10 or 100 or 1,000)

e $2 \times \dots = 18 \times 100$

(18 or 9 or 90 or 900)

f $8 \times 20 = \dots \times 10$

(16 or 8 or 2 or 10)

g $6 \times 300 = 18 \times \dots$

(9 or 10 or 100 or 1,000)

h $\dots \times 200 = 10 \times 100$

(100 or 5 or 50 or 10)

7 Complete using (<, =, or >):

a 8×21

$8 \times 7 \times 2$

b 18×5

$6 \times 3 \times 5$

c 5×12

$(5 \times 2) \times 4$

d 20×90

6×300

e 40×100

50×800

f 900 Thousands

90 Millions

g 30×100

300 Hundreds

h 240×100

600×400

i 20 Thousands

500×40

j 25×0

$4 \times (2 \times 0)$

k 20×100

50×400

l $10 \times 4,000$

80×50

8 Match:

a $(2 \times 5) \times 6$

3×800 1

b 8×30

10×6 2

c 24×100

400×100 3

d 800×50

18×5 4

e $3 \times (6 \times 5)$

24×10 5

- 9 Use the **Associative Property of Multiplication** to calculate the number of pens in the opposite picture.

.....

.....

.....

.....



- 10 Use the **Associative Property of Multiplication** to calculate the number of books in the opposite picture.

.....

.....

.....

.....



- 11 Emad bought 5 packs of water bottles. Each pack contains 4 rows of bottles, and each row has 3 bottles. Use the **Associative Property of Multiplication** to calculate the number of water bottles that Emad bought.

.....

.....

.....

- 12 The library has 10 bookcases, each bookcase has 5 shelves, and each shelf has 8 books. Use the **Associative Property of Multiplication** to calculate the number of books in the library.

.....

.....

.....

Accumulative Assessment

Up to Lesson 7

1 Choose the correct answer:

- a $8 \times 300 = 24 \times \dots$ (300 or 10 or 100 or 1,000)
- b $40 \times 50 = 2 \times \dots$ (9 or 10 or 100 or 1,000)
- c $50 \times 2 = 10 \times \dots$ (10 or 100 or 1,000 or 50)
- d If $45 = 9 \times a$, then $a = \dots$ (54 or 45 or 9 or 5)
- e $(9 \times 2) \times 5 = 9 \times \dots$ (100 or 20 or 10 or 5)
- f $\dots$ Hundreds = 400×50 (200,000 or 20,000 or 2,000 or 200)
- g $8 \times 30 = 8 \times (\dots \times 10)$ (30 or 24 or 8 or 3)

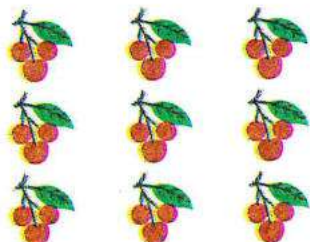
2 Answer the following:

- a Arrange the following numbers in an ascending order:

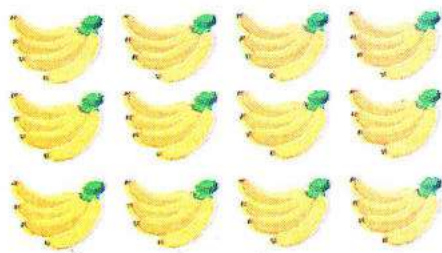
450,000,002 , 405,200,000 , 450,200,000 , 405,000,002

- b Use the Associative Property of Multiplication to calculate the numbers of fruits in the following pictures:

1



2





Assessment on Concept 2

1 Choose the correct answer:

a Which of the following represents the **Associative Property**?

($(2 \times 3) \times 5 = 2 \times (3 \times 5)$ or $4 \times 1 = 4$ or $3 + 6 = 6 + 3$ or $5 \times 0 = 0$)

b $3 \times 700 = 3 \times 100 \times$ (7 or 30 or 500 or 21)

c The Multiplicative Identity Element is (1 or 2 or 0 or 3)

d If $a \times 3 = 3 \times 9$, then $a =$ (27 or 18 or 9 or 3)

e $4 \times 5 \times 3 =$ $\times 3$ (4 or 5 or 9 or 20)

f $43 \times$ $= 4,300$ (10 or 100 or 1,000 or 10,000)

2 Find the value of the **unknown**:

a $65 \times c = 65,000$

.....
.....

b $8 \times 80 = b$

.....
.....

c $y \times 400 = 3,600$

.....
.....

Unit ⁶ Factors and Multiples

Concept 6.1 Understanding Factors

Lessons 1&2

- 1 Find **all the factors** of each number using a **factor T-chart** and a **factor rainbow**:

a 10

The factors of 10 are:

.....
.....

10

--

b 12

The factors of 12 are:

.....
.....

12

--

c 15

The factors of 15 are:

.....
.....

15

--

d 18

The factors of 18 are:

.....
.....

18

--

e 20

The factors of 20 are:

.....
.....

20

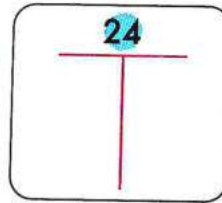
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f 24

The factors of 24 are:

.....

.....



.....

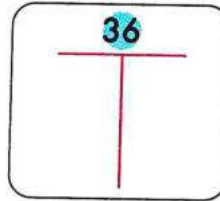
.....

g 36

The factors of 36 are:

.....

.....



.....

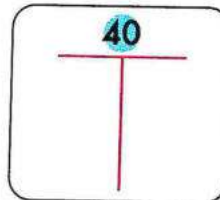
.....

h 40

The factors of 40 are:

.....

.....



.....

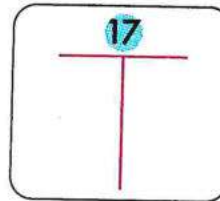
.....

i 17

The factors of 17 are:

.....

.....



.....

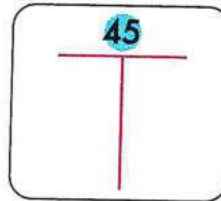
.....

j 45

The factors of 45 are:

.....

.....



.....

.....

2 Find **all the factors** of each of the following numbers:
Use the method you prefer.

a 13

.....

.....

The factors of 13 are:

.....

.....

b 60

.....

.....

The factors of 60 are:

.....

.....

c 28

.....

.....

The factors of 28 are:

.....

.....

Unit 6 | Factors and Multiples

d 14

The factors of 14 are:

.....

.....

e 50

The factors of 50 are:

.....

.....

f 32

The factors of 32 are:

.....

.....

3 Using the 100 Chart:

a Count by **skipping 2s**, shade the **numbers** you **say** while counting.

Write the multiples of 2.

..... , , , , , , , , , ,

..... , , , , , , , , , ,

..... , , , , , , , , , ,

..... , , , , , , , , , ,

..... , , , , , , , , , ,

b Count by **skipping 5s**, shade the **numbers** you **say** while counting.

Write the multiples of 5.

..... , , , , , , , , , ,

..... , , , , , , , , , ,

c Count by **skipping 10s**, shade the **numbers** you **say** while counting.

Write multiples of 10.

..... , , , , , , , , , ,

d Write the common multiples of 2 , 5 , and 10:

..... , , , , , , , , , ,

- 4 Write down **all the factors** of the following numbers. Then, write if the number is **prime** or **composite**:

	Number	Factors	Number of Factors	Prime or Composite
a	6			
b	19			
c	22			
d	31			
e	14			
f	30			
g	25			
h	23			
i	11			

- 5 Complete with a **tick (✓)** under the **factors** of the number:

Number	Factors of the Number				
	2	3	6	9	5
8					
9					
25					
12					
15					
10					
18					
27					
28					
32					
30					
36					
45					
60					
90					

6 Complete the following:

- a A **prime** number between **30** and **40** whose **Ones** digit is greater than its **Tens** digit is
- b An **even** number between **20** and **30** that has **1, 2, 4,** and **8** as some of its factors is
- c An **odd** number between **20** and **30** that has **1, 3,** and **7** as some of its factors is
- d A **prime** number that lies between **30** and **40**, and the digit in the **Tens** place is greater than the digit in the **Ones** place is
- e A **prime** number that lies between **50** and **60**, and the digit in the **Tens** place is less than the digit in the **Ones** place is
- f All **prime** numbers are numbers, except the number, which is an **even** number.
- g The **smallest** prime number is
- h The **smallest odd** prime number is
- i An **even** prime number is
- j The **prime** numbers between **40** and **50** are
- k The number that has **only two factors** is called a/an
- l The **number of factors** of a **prime** number is
- m The whole number **one** is not a prime number because it has
.....
- n **6** is not a prime number because it has
.....

7 Choose the correct answer:

- a is a **prime** number. (64 or 15 or 17 or 21)
- b The **smallest odd** number is (1 or 2 or 3 or 5)
- c The **smallest prime** number is (1 or 2 or 3 or 4)
- d The **smallest odd prime** number is (0 or 1 or 2 or 3)
- e The **smallest even prime** number is (0 or 1 or 2 or 3)
- f The **prime** number has
(one factor only or two factors or three factors or five factors)
- g The number that has only **two factors** is called a/an number.
(composite or prime or even or odd)
- h The whole number **one** is neither a prime nor a composite number
because it has
(no factors or two factors only or one factor only or more than two factors)
- i **10** is not a prime number because it has
(no factors or two factors only or one factor only or more than two factors)
- j **5** is a prime number because it has
(no factors or two factors only or one factor only or more than two factors)
- k The number of factors of **14** is factors. (3 or 2 or 4 or 6)
- l The number of factors of **16** is factors. (3 or 4 or 5 or 6)
- m A number whose factors are (**1, 2, 4, 5, 10, and 20**) is
(20 or 10 or 100 or 200)
- n **9** is a/an number. (prime or even or odd or identity)

Accumulative Assessment

Up to Lesson 2

1 Find the result:

a $4,589 + 1,628 =$

b $9,028 - 4,409 =$

c $500 \times 80 =$

d $8 \times 400 =$ $\times 100 =$

2 Choose the correct answer:

a All prime numbers are **odd** numbers, except, which is an **even** number.
(1 or 2 or 3 or 0)

b $4 \times (6 \times 3) = (4 \times 6) \times 3$ (..... Property)
(Identity or Commutative or Associative or Distributive)

c A rectangle has a length of 5 cm and a width of 3 cm. Its area is cm^2 .
(53 or 15 or 16 or 8)

d 6 is a composite number because it has
(one factor only or two factors only or more than two factors or no factors)

e The **smallest odd prime** number is (0 or 1 or 2 or 3)

f $90 \times 300 = 27 \times$ (10 or 100 or 1,000 or 10,000)

g The prime number between 60 and 70 whose Tens digit is less than its Ones digit is
(61 or 63 or 67 or 69)

h The number of factors of 25 is (2 or 3 or 4 or 5)

3 Find all the factors of each of the following numbers:

a 40

The factors of 40 are:

.....

b 28

The factors of 28 are:

.....

Lesson 3

1 Find the **greatest common factor** of each of the following numbers:

a 10 and 15

Factors of 10 are:

Factors of 15 are:

The **common factors** are: The **GCF** is:

b 12 and 18

Factors of 12 are:

Factors of 18 are:

The **common factors** are: The **GCF** is:

c 6 and 8

Factors of 6 are:

Factors of 8 are:

The **common factors** are: The **GCF** is:

d 16 and 20

Factors of 16 are:

Factors of 20 are:

The **common factors** are: The **GCF** is:

e 21 and 14

Factors of 21 are:

Factors of 14 are:

The **common factors** are: The **GCF** is:

f 24 and 36

Factors of 24 are:

Factors of 36 are:

The **common factors** are: The **GCF** is:

g 48 and 32

Factors of 48 are:

Factors of 32 are:

The **common factors** are: The **GCF** is:

1 60 and 36

Factors of 60 are:

Factors of 36 are:

The common factors are: The GCF is:

- 2 There are 28 girls and 21 boys in a class. The pupils will be divided into equal groups of girls and equal groups of boys. What is the largest number of groups that can be formed so that each group has the same number of pupils? How many boys are in each group of boys? How many girls are in each group of girls?

.....

.....

.....

A teacher is preparing snacks to be distributed among the students. She has 24 pieces of croissants and 16 pieces of sweets. What is the largest number of snacks the teacher can make if each meal contains exactly the same number of croissants and exactly the same number of sweets? How many croissants are there in each meal? How many sweets are there in each meal?

.....

.....

.....

- 4 Mohab works in flower arrangements; he has 21 red flowers and 14 blue flowers. If Mohab wanted all the arrangements to be identical and there were no flowers left, what is the greatest number of flower arrangements he could have? How many red flowers and blue flowers are there in each arrangement?

.....

.....

.....

Accumulative Assessment

Up to Lesson 3

1 Choose the correct answer:

- a The **greatest common factor** of **9** and **6** is (15 or 9 or 6 or 3)
- b $90 \times 500 =$ (14,000 or 4,500 or 45,000 or 450,000)
- c $(6 \times 5) \times 80 =$ (24 x 10 or 24 x 100 or 24 x 1,000 or 88 x 10)
- d $4 \times (20 \times \dots) = (4 \times 20) \times 7$ (4 or 20 or 7 or 80)
- e The **greatest common factor** of **8** and **12** is (1 or 2 or 4 or 6)
- f $9 \times 400 = 36 \times$ (1 or 10 or 100 or 1,000)
- g A square has an area of **25** cm². Its perimeter is cm. (25 or 5 or 20 or 50)
- h 5,000 meters = kilometers. (5 or 50 or 500 or 5,000)

2 Answer the following:

- a Find the **greatest common factor** of **30** and **45**:

Factors of **30** are:

.....

The **common factors** are:

The **greatest common factor (GCF)** is:

Factors of **45** are:

.....

- b Maryam practices swimming and spends **a third of an hour** swimming every day. What is the total number of minutes she spends swimming in 5 days?

.....



Assessment on Concept 1

1 Choose the correct answer:

- a The **smallest odd prime** number is (3 or 2 or 7 or 11)
- b The numbers **1, 7, 14, and 2** are factors of (14 or 7 or 5 or 24)
- c The **greatest common factor** of **21** and **35** is (5 or 7 or 8 or 3)
- d The number of factors of **9** is (2 or 3 or 4 or 5)
- e The number has **two** factors only.
(even or odd or prime or composite)
- f The **greatest common factor** of **7** and **5** is (35 or 12 or 5 or 1)

2 Answer the following:

a Match:

- 1 The **smallest even prime** number is • 6 a
- 2 The **greatest common factor** of 40 and 50 is • 2 b
- 3 One **factor** of 42 is • 10 c

- b A farm has 15 ducks and 25 chickens. Divide these birds into groups that are equal in number.

How many groups are there? How many ducks and chickens are in each group?

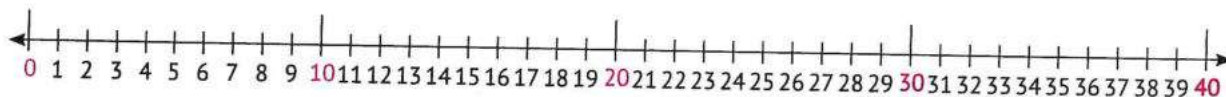
Unit ⁶ Factors and Multiples

Concept 6.2 Understanding Multiples

Lessons 4-6

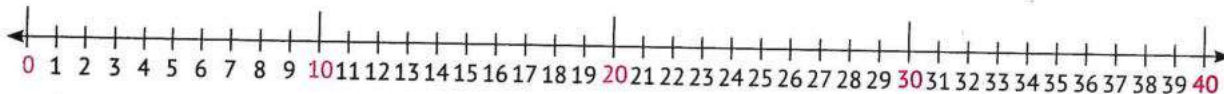
1 Draw a line connecting each number to the other to show skip counting on the number line. Start from 0 each time:

a Find the multiples of 2.



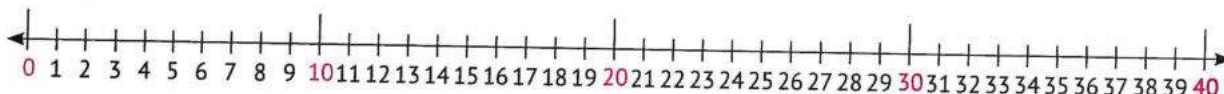
Multiples of 2 are:

b Find the multiples of 3.



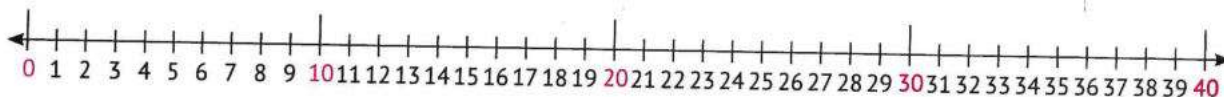
Multiples of 3 are:

c Find the multiples of 4.



Multiples of 4 are:

d Find the multiples of 5.



Multiples of 5 are:

2 Color the **multiples** using the following **100 Charts** and **skip counting**:

a The multiples of **2** are:

.....

.....

.....

.....

b The multiples of **3** are:

.....

.....

.....

.....

c The multiples of **4** are:

.....

.....

.....

.....

91	92	93	94	95	96	97	98	99	100
81	82	83	84	85	86	87	88	89	90
71	72	73	74	75	76	77	78	79	80
61	62	63	64	65	66	67	68	69	70
51	52	53	54	55	56	57	58	59	60
41	42	43	44	45	46	47	48	49	50
31	32	33	34	35	36	37	38	39	40
21	22	23	24	25	26	27	28	29	30
11	12	13	14	15	16	17	18	19	20
1	2	3	4	5	6	7	8	9	10

91	92	93	94	95	96	97	98	99	100
81	82	83	84	85	86	87	88	89	90
71	72	73	74	75	76	77	78	79	80
61	62	63	64	65	66	67	68	69	70
51	52	53	54	55	56	57	58	59	60
41	42	43	44	45	46	47	48	49	50
31	32	33	34	35	36	37	38	39	40
21	22	23	24	25	26	27	28	29	30
11	12	13	14	15	16	17	18	19	20
1	2	3	4	5	6	7	8	9	10

91	92	93	94	95	96	97	98	99	100
81	82	83	84	85	86	87	88	89	90
71	72	73	74	75	76	77	78	79	80
61	62	63	64	65	66	67	68	69	70
51	52	53	54	55	56	57	58	59	60
41	42	43	44	45	46	47	48	49	50
31	32	33	34	35	36	37	38	39	40
21	22	23	24	25	26	27	28	29	30
11	12	13	14	15	16	17	18	19	20
1	2	3	4	5	6	7	8	9	10

d The multiples of 5 are:

.....

.....

.....

.....

91	92	93	94	95	96	97	98	99	100
81	82	83	84	85	86	87	88	89	90
71	72	73	74	75	76	77	78	79	80
61	62	63	64	65	66	67	68	69	70
51	52	53	54	55	56	57	58	59	60
41	42	43	44	45	46	47	48	49	50
31	32	33	34	35	36	37	38	39	40
21	22	23	24	25	26	27	28	29	30
11	12	13	14	15	16	17	18	19	20
1	2	3	4	5	6	7	8	9	10

e The multiples of 6 are:

.....

.....

.....

.....

91	92	93	94	95	96	97	98	99	100
81	82	83	84	85	86	87	88	89	90
71	72	73	74	75	76	77	78	79	80
61	62	63	64	65	66	67	68	69	70
51	52	53	54	55	56	57	58	59	60
41	42	43	44	45	46	47	48	49	50
31	32	33	34	35	36	37	38	39	40
21	22	23	24	25	26	27	28	29	30
11	12	13	14	15	16	17	18	19	20
1	2	3	4	5	6	7	8	9	10

f The multiples of 7 are:

.....

.....

.....

.....

91	92	93	94	95	96	97	98	99	100
81	82	83	84	85	86	87	88	89	90
71	72	73	74	75	76	77	78	79	80
61	62	63	64	65	66	67	68	69	70
51	52	53	54	55	56	57	58	59	60
41	42	43	44	45	46	47	48	49	50
31	32	33	34	35	36	37	38	39	40
21	22	23	24	25	26	27	28	29	30
11	12	13	14	15	16	17	18	19	20
1	2	3	4	5	6	7	8	9	10

g The multiples of 8 are:

.....

.....

.....

.....

91	92	93	94	95	96	97	98	99	100
81	82	83	84	85	86	87	88	89	90
71	72	73	74	75	76	77	78	79	80
61	62	63	64	65	66	67	68	69	70
51	52	53	54	55	56	57	58	59	60
41	42	43	44	45	46	47	48	49	50
31	32	33	34	35	36	37	38	39	40
21	22	23	24	25	26	27	28	29	30
11	12	13	14	15	16	17	18	19	20
1	2	3	4	5	6	7	8	9	10

h The multiples of 9 are:

.....

.....

.....

.....

91	92	93	94	95	96	97	98	99	100
81	82	83	84	85	86	87	88	89	90
71	72	73	74	75	76	77	78	79	80
61	62	63	64	65	66	67	68	69	70
51	52	53	54	55	56	57	58	59	60
41	42	43	44	45	46	47	48	49	50
31	32	33	34	35	36	37	38	39	40
21	22	23	24	25	26	27	28	29	30
11	12	13	14	15	16	17	18	19	20
1	2	3	4	5	6	7	8	9	10

3 Find the multiples of each of 2 and 3 up to 20. Then, find the common multiples of both numbers:

- The multiples of 2 are:
- The multiples of 3 are:
- The common multiples of the two numbers are:

4 Find the **multiples** of each of 4 and 5 up to 40. Then, find the **common multiples** of both numbers:

- The multiples of 4 are:
- The multiples of 5 are:
- The **common multiples** of the two numbers are:

5 Find the **multiples** of each of 7 and 6 up to 90. Then, find the **common multiples** of both numbers:

- The multiples of 7 are:
- The multiples of 6 are:
- The **common multiples** of the two numbers are:

6 Find the **multiples** of each of 4 and 6 up to 50. Then, find the **common multiples** of both numbers:

- The multiples of 4 are:
- The multiples of 6 are:
- The **common multiples** of the two numbers are:

7 Find the **multiples** of each of 2 and 5 up to 40. Then, find the **common multiples** of both numbers:

- The multiples of 2 are:
- The multiples of 5 are:
- The **common multiples** of the two numbers are:

8 Find the **multiples** of each of **6** and **8** up to **60**. Then, find the **common multiples** of both numbers:

– The multiples of **6** are:

– The multiples of **8** are:

– The **common multiples** of the two numbers are:

9 Complete the following:

a Write **5** multiples of **8**. (.....,,,,)

b Write **5** multiples of **9**. (.....,,,,)

c Write **5** multiples of **7**. (.....,,,,)

d Write **two** common multiples of **2** and **6**. (.....,)

e Write **two** common multiples of **4** and **9**. (.....,)

f Write **two** common multiples of **8** and **5**. (.....,)

g If $42 = 6 \times 7$, then is a **multiple** of the two numbers and
Also, and are **factors** of the number

h If $45 = \dots \times \dots$, then is a **multiple** of the two numbers **5** and **9**.
Also, and are **factors** of the number

i If = 8×3 , then is a **multiple** of the two numbers **8** and **3**. Also,
..... and are **factors** of the number

j An **even** number is a multiple of **2**, **3**, and **4** and lies between **20** and **30**.
The number is

k An **even** number is a multiple of **3**, **5**, and **10** and lies between **20** and **40**.
The number is

l An **odd** number is a multiple of **5** and **9**, and it lies between **30** and **50**.
The number is

m An **odd** number is a multiple of **3** and **7**, and it lies between **20** and **30**.
The number is

n The relationship between **2**, **4**, and **8** is that

o The relationship between **2**, **5**, and **10** is that

p The **common multiples** of **4** and **6** are:

0, **12**, **24**, **36**, **48**,,,

10 Choose the correct answer:

a is a **factor** of **8**. (2 or 16 or 12 or 5)

b is a **multiple** of **8**. (2 or 16 or 12 or 9)

c is a **common multiple** of **4** and **6**. (12 or 16 or 18 or 30)

d is a **common multiple** of **8** and **3**. (15 or 32 or 24 or 27)

e If $4 \times 5 = 20$, then **20** is a of **4** and **5**.

(difference or multiple or factor or sum)

f If $7 \times 3 = 21$, then **3** and **7** are **factors** of (7 or 21 or 3 or 37)

g is a number that is a **multiple** of **2**, **3**, and **4** and lies between **20** and **30**. (24 or 26 or 28 or 45)

h is a number that is a **multiple** of **2**, **4**, and **5** and lies between **10** and **30**. (52 or 15 or 20 or 25)

i is an **odd** number that is a **multiple** of **3** and **5**, and it lies between **10** and **30**. (8 or 15 or 20 or 25)

j is a multiple of all numbers. (0 or 1 or 2 or 3)

Accumulative Assessment

Up to Lesson 6

1 Choose the correct answer:

- a 12 is a **common multiple** of 3 and (5 or 4 or 9 or 7)
- b A is the best unit for measuring the **length** of an **ant**.
(centimeter or millimeter or meter or kilometer)
- c $50 \times \dots = 20,000$ (4 or 40 or 400 or 4,000)
- d The **GCF** of the two numbers 12 and 9 is (3 or 6 or 12 or 36)
- e The number 45,985 rounded to the nearest 100 $\approx$
(45,990 or 45,900 or 46,000 or 46,900)
- f A square whose **perimeter** is 20 cm has a side length of cm.
(10 or 5 or 4 or 2)
- g A number is a **common multiple** of the numbers 6 and 8 and it lies between the numbers 20 and 30. The number is
(24 or 26 or 28 or 29)

2 Answer the following:

- a Find the **multiples** of each of 4 and 6 up to 30. Then, find the **common multiples** of both numbers:
- The multiples of 4 are:
 - The multiples of 6 are:
 - The **common multiples** of the two numbers are:
- b Shaimaa went to the club at 8:45 a.m. and came back at 10 a.m.
How long did she stay at the club?
-
-



Assessment on Concept 2

1 Choose the correct answer:

- a The **common multiple** of all numbers is (1 or 9 or 4 or 0)
- b All the following numbers are multiples of 3, except
(17 or 24 or 18 or 9)
- c 27 is a common multiple of 9 and (2 or 5 or 3 or 7)
- d The number whose factors are 1, 2, 3, 4, 6, and 12 is (6 or 9 or 12 or 16)
- e The common multiple of 4 and 8 is (8 or 12 or 18 or 20)
- f The multiple of 9 between 30 and 40 is (33 or 36 or 37 or 39)
- g 24 is a multiple of and
(8 and 6 or 4 and 5 or 6 and 7 or 9 and 12)

2 Answer the following:

a Match:

- 1 A **multiple** of 5 is • 1 a
- 2 A **factor** of 16 is • 40 b
- 3 The **common factor** of all numbers is • 8 c

b Complete:

- 1 The multiples of 4 are,,,
- 2 The multiples of 6 are,,,
- 3 The common multiples of 4 and 6 are,,

Unit 7

Multiplication and Division: Computation and Relationships

Concept 7.1

Multiplying by 1-Digit and 2-Digit Numbers

Lesson 1

1 Multiply using the base ten blocks:

a $35 \times 3 =$

Tens ↓ 	+	Ones ↓ 	=	
--	---	--	---	-------

b $14 \times 5 =$

Tens ↓ 	+	Ones ↓ 	=	
--	---	--	---	-------

c $42 \times 3 =$

Tens ↓ 	+	Ones ↓ 	=	
--	---	--	---	-------

d $65 \times 2 =$

..... Tens ↓	+	 Ones ↓	=	
--	---	---	---	--

e $13 \times 6 =$

..... Tens ↓	+	 Ones ↓	=	
--	---	---	---	--

f $86 \times 2 =$

..... Tens ↓	+	 Ones ↓	=	
--	---	---	---	--

g $54 \times 3 =$

..... Tens ↓	+	 Ones ↓	=	
--	---	---	---	--

2 Use the rectangle area model to multiply:

a $82 \times 6 =$

$\dots\dots\dots \times \dots\dots\dots = \dots\dots\dots$	$\dots\dots\dots \times \dots\dots\dots = \dots\dots\dots$
$\dots\dots\dots + \dots\dots\dots = \dots\dots\dots$	

b $76 \times 3 =$

$\dots\dots\dots \times \dots\dots\dots = \dots\dots\dots$	$\dots\dots\dots \times \dots\dots\dots = \dots\dots\dots$
$\dots\dots\dots + \dots\dots\dots = \dots\dots\dots$	

c $63 \times 8 =$

$\dots\dots\dots \times \dots\dots\dots = \dots\dots\dots$	$\dots\dots\dots \times \dots\dots\dots = \dots\dots\dots$
$\dots\dots\dots + \dots\dots\dots = \dots\dots\dots$	

d $92 \times 7 =$

$\dots\dots\dots \times \dots\dots\dots = \dots\dots\dots$	$\dots\dots\dots \times \dots\dots\dots = \dots\dots\dots$
$\dots\dots\dots + \dots\dots\dots = \dots\dots\dots$	

e $19 \times 8 =$

$\dots\dots\dots \times \dots\dots\dots = \dots\dots\dots$	$\dots\dots\dots \times \dots\dots\dots = \dots\dots\dots$
$\dots\dots\dots + \dots\dots\dots = \dots\dots\dots$	

f $15 \times 9 =$

$\dots\dots\dots \times \dots\dots\dots = \dots\dots\dots$	$\dots\dots\dots \times \dots\dots\dots = \dots\dots\dots$
$\dots\dots\dots + \dots\dots\dots = \dots\dots\dots$	

g $57 \times 3 =$

$\dots\dots\dots \times \dots\dots\dots = \dots\dots\dots$	$\dots\dots\dots \times \dots\dots\dots = \dots\dots\dots$
$\dots\dots\dots + \dots\dots\dots = \dots\dots\dots$	

h $99 \times 9 =$

..... $\times$ =	 $\times$ =
------------------------------	------------------------------

..... + =

i $36 \times 5 =$

..... $\times$ =	 $\times$ =
------------------------------	------------------------------

..... + =

j $92 \times 3 =$

..... $\times$ =	 $\times$ =
------------------------------	------------------------------

..... + =

- 3 Each bus can accommodate **22** passengers at a time. What is the **maximum number** of passengers that the bus can carry in **5** trips? (Use the **rectangle area model**.)

.....
.....

..... $\times$ =	 $\times$ =
------------------------------	------------------------------

..... + =

- 4 The length of the bus route is **58** km. How many **kilometers** would the bus travel if it traveled this route **9** times a day? (Use the **rectangle area model**.)

.....
.....

..... $\times$ =	 $\times$ =
------------------------------	------------------------------

..... + =

- 5 Hossam saves **85** pounds per month. How many pounds does Hossam save in **6** months? (Use the **rectangle area model**.)

.....
.....

..... $\times$ =	 $\times$ =
------------------------------	------------------------------

..... + =

Accumulative Assessment

Up to Lesson 1

1 Choose the correct answer:

- a The **smallest odd prime** number is (1 or 2 or 3 or 5)
- b If $5n = 50$, then $n =$ (250 or 10 or 0 or 5)
- c $80 \times 60 =$ $\times 100$ (86 or 80 or 48 or 4,800)
- d The **greatest common factor** of 12 and 18 is (36 or 24 or 12 or 6)
- e $8 \times$ $= 40,000$ (5,000 or 500 or 50 or 50,000)
- f $23 \text{ km}, 375 \text{ m} - 2,375 \text{ m} =$ m. (0 or 21,000 or 21,375 or 625)

2 Answer the following:

a Multiply using the **base ten blocks**:



..... Tens Ones

..... $\times$ = +

=

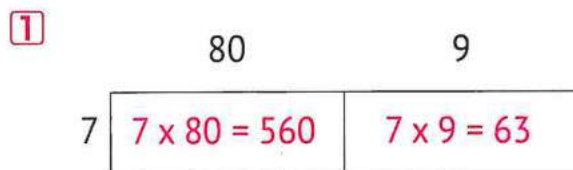


..... Tens Ones

..... $\times$ = +

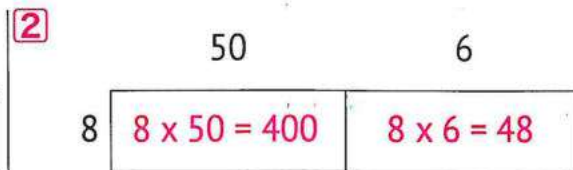
=

b Use the **rectangle area model** to multiply:



..... $\times$ = +

=



..... $\times$ = +

=

Lesson 2

1 Complete the following:

a $4 \times (8 + 9) = (4 \times \dots) + (4 \times \dots)$

b $9 \times (\dots + \dots) = (9 \times 3) + (9 \times 4)$

c $\dots \times (6 + 5) = (3 \times \dots) + (3 \times \dots)$

d $6 \times (3 + 4 + 5) = (\dots \times \dots) + (\dots \times \dots) + (\dots \times \dots)$

e $6 \times (200 + 90 + 3) = (\dots \times \dots) + (\dots \times \dots) + (\dots \times \dots)$

f $6 \times (\dots + \dots + \dots) = (\dots \times 8) + (\dots \times 9) + (\dots \times 3)$

g $\dots \times (\dots + \dots + \dots) = (2 \times 700) + (2 \times 30) + (2 \times 9)$

2 Use the **Distributive Property** to solve the following problems:

a $4 \times 31 = 4 \times (\dots + \dots)$
 $= (4 \times \dots) + (4 \times \dots)$
 $= \dots + \dots = \dots$

b $6 \times 69 = \dots \times (\dots + \dots)$
 $= (\dots \times \dots) + (\dots \times \dots)$
 $= \dots + \dots = \dots$

c $6 \times 485 = \dots \times (\dots + \dots + \dots)$
 $= (\dots \times \dots) + (\dots \times \dots) + (\dots \times \dots)$
 $= \dots + \dots + \dots = \dots$

Unit 7 | Multiplication and Division: Computation and Relationships

$$\begin{aligned} \text{d } 8 \times 276 &= \dots \times (\dots + \dots + \dots) \\ &= (\dots \times \dots) + (\dots \times \dots) + (\dots \times \dots) \\ &= \dots + \dots + \dots = \dots \end{aligned}$$

$$\begin{aligned} \text{e } 4 \times 623 &= \dots \times (\dots + \dots + \dots) \\ &= (\dots \times \dots) + (\dots \times \dots) + (\dots \times \dots) \\ &= \dots + \dots + \dots = \dots \end{aligned}$$

$$\begin{aligned} \text{f } 3 \times 2,564 &= \dots \times (\dots + \dots + \dots + \dots) \\ &= (\dots \times \dots) + (\dots \times \dots) + (\dots \times \dots) + (\dots \times \dots) \\ &= \dots + \dots + \dots + \dots = \dots \end{aligned}$$

$$\begin{aligned} \text{g } 6 \times 4,893 &= \dots \times (\dots + \dots + \dots + \dots) \\ &= (\dots \times \dots) + (\dots \times \dots) + (\dots \times \dots) + (\dots \times \dots) \\ &= \dots + \dots + \dots + \dots = \dots \end{aligned}$$

$$\begin{aligned} \text{h } 7 \times 3,892 &= \dots \times (\dots + \dots + \dots + \dots) \\ &= (\dots \times \dots) + (\dots \times \dots) + (\dots \times \dots) + (\dots \times \dots) \\ &= \dots + \dots + \dots + \dots = \dots \end{aligned}$$

$$\begin{aligned} \text{i } 6 \times 3,060 &= \dots \times (\dots + \dots) \\ &= (\dots \times \dots) + (\dots \times \dots) \\ &= \dots + \dots = \dots \end{aligned}$$

$$\begin{aligned} \text{j } 3 \times 8,005 &= \dots \times (\dots + \dots) \\ &= (\dots \times \dots) + (\dots \times \dots) \\ &= \dots + \dots = \dots \end{aligned}$$

3 Use the **rectangle area model** to solve the following problems:

a $8 \times 125 =$

b $6 \times 512 =$

c $9 \times 629 =$

d $7 \times 706 =$

e $5 \times 2,365 =$

f $6 \times 1,283 =$

g $9 \times 1,822 =$

h $7 \times 2,005 =$

- 4 The length of a bus is 1,280 centimeters.
How long are 3 buses? (Use the Distributive Property.)

.....

.....

.....

- 5 Hisham bought 7 kg of oranges; the price of one kilogram was 525 piasters. How much did Hisham pay for the oranges?
(Use the Distributive Property.)

.....

.....

- 6 The distance from Ali's house to the school is 930 meters, and the distance from his house to the club is 5 times the distance between his house and his school. What is the distance between Ali's house and the club?
(Use the rectangle area model.)

.....

.....

.....

- 7 Strips of cardboard in the form of rectangles are 185 cm long and 8 cm wide. Find the area of this cardboard.
(Use the rectangle area model.)

.....

.....

.....

Accumulative Assessment

Up to Lesson 2

1 Choose the correct answer:

- a The equation that expresses "***n*** is equal to three times more than 8" is
 (***n*** = 3 + 8 or ***n*** = 3 × 8 or 3 × ***n*** = 8 or 8 × ***n*** = 24)
- b If a square has a side length of 6 cm, its area is cm².
 (12 or 30 or 24 or 36)
- c $9 \times 60 = 60 \times 9$ (..... Property)
 (Identity or Commutative or Associative or Distributive)
- d The common multiple of 4 and 6, and it lies between 30 and 40 is
 (32 or 34 or 36 or 38)
- e $60 \times \text{.....} = 30,000$ (2,000 or 5,000 or 20,000 or 500)
- f 45 kg = grams (450 or 4,500 or 45,000 or 450,000)
- g $6:45 + 2:55 = \text{.....} : \text{.....}$ (9:20 or 9:30 or 9:40 or 9:50)

2 Answer the following:

- a Use the **Distributive Property** to find:

① $9 \times 96 = \text{.....}$ $= \text{.....}$ $= \text{.....}$	② $8 \times 245 = \text{.....}$ $= \text{.....}$ $= \text{.....}$
--	---

- b Complete using the following **rectangle area model**:

	5,000	600	80	9
8	$8 \times 5,000 = 40,000$	$8 \times 600 = 4,800$	$8 \times 80 = 640$	$8 \times 9 = 72$

$= 8 \times \text{.....} = 8 \times (\text{.....} + \text{.....} + \text{.....} + \text{.....})$
 $= (\text{.....} \times \text{.....}) + (\text{.....} \times \text{.....}) + (\text{.....} \times \text{.....}) + (\text{.....} \times \text{.....})$
 $= \text{.....} + \text{.....} + \text{.....} + \text{.....} = \text{.....}$

Lessons 3&4

1 Complete the following:

a $564 = 500 + 60 + \dots$

b $500 + 60 + 4 = \dots$

c $9,000 + 500 + 30 + 2 = \dots$

d $6,000 + 400 + 80 + 3 = \dots$

e $9,000 + 50 = \dots$

f $6,000 + 600 = \dots$

g $4,000 + 3 = \dots$

h $785 = \dots + \dots + \dots$

i $927 = \dots + \dots + \dots$

j $7,859 = \dots + \dots + \dots + \dots$

k $8,324 = \dots + \dots + \dots + \dots$

l $6,201 = \dots + \dots + \dots$

m $309 = \dots + \dots$

n $9,006 = \dots + \dots$

o $8,200 = \dots + \dots$

p $3,010 = \dots + \dots$

2 Use the **partial products algorithm** to multiply:

a $3 \times 452 = \dots$

$$\begin{array}{r}
 452 \\
 \times 3 \\
 \hline
 \dots \quad (400 \times 3) \\
 + \dots \quad (50 \times 3) \\
 + \dots \quad (2 \times 3) \\
 \hline
 \dots
 \end{array}$$

b $725 \times 4 = \dots$

$$\begin{array}{r}
 725 \\
 \times 4 \\
 \hline
 \dots \quad (700 \times 4) \\
 + \dots \quad (20 \times 4) \\
 + \dots \quad (5 \times 4) \\
 \hline
 \dots
 \end{array}$$

Ⓒ $6 \times 218 =$

$$\begin{array}{r} 218 \\ \times 6 \\ \hline \end{array}$$

..... (..... X)

+ (..... X)

+ (..... X)

.....

Ⓓ $936 \times 8 =$

$$\begin{array}{r} 936 \\ \times 8 \\ \hline \end{array}$$

..... (..... X)

+ (..... X)

+ (..... X)

.....

Ⓔ $3 \times 1,254 =$

$$\begin{array}{r} 1,254 \\ \times 3 \\ \hline \end{array}$$

..... (..... X)

+ (..... X)

+ (..... X)

+ (..... X)

.....

Ⓕ $6,152 \times 9 =$

$$\begin{array}{r} 6,152 \\ \times 9 \\ \hline \end{array}$$

..... (..... X)

+ (..... X)

+ (..... X)

+ (..... X)

.....

Ⓖ $3 \times 2,908 =$

$$\begin{array}{r} 2,908 \\ \times 3 \\ \hline \end{array}$$

..... (..... X)

+ (..... X)

+ (..... X)

.....

Ⓖ $6,028 \times 6 =$

$$\begin{array}{r} 6,028 \\ \times 6 \\ \hline \end{array}$$

..... (..... X)

+ (..... X)

+ (..... X)

.....

3 Use the **standard multiplication algorithm** to multiply:

a

$$\begin{array}{r} 35 \\ \times 8 \\ \hline \end{array}$$

b

$$\begin{array}{r} 69 \\ \times 5 \\ \hline \end{array}$$

c

$$\begin{array}{r} 53 \\ \times 3 \\ \hline \end{array}$$

d

$$\begin{array}{r} 416 \\ \times 4 \\ \hline \end{array}$$

e

$$\begin{array}{r} 835 \\ \times 6 \\ \hline \end{array}$$

f

$$\begin{array}{r} 239 \\ \times 5 \\ \hline \end{array}$$

g

$$\begin{array}{r} 1,496 \\ \times 7 \\ \hline \end{array}$$

h

$$\begin{array}{r} 2,198 \\ \times 6 \\ \hline \end{array}$$

i

$$\begin{array}{r} 5,123 \\ \times 8 \\ \hline \end{array}$$

j

$$\begin{array}{r} 203 \\ \times 6 \\ \hline \end{array}$$

k

$$\begin{array}{r} 1,207 \\ \times 3 \\ \hline \end{array}$$

l

$$\begin{array}{r} 3,008 \\ \times 4 \\ \hline \end{array}$$

- 4 Complete the following table of the multiplication processes, and then find the result using the given strategy:

Problem	Product Estimation (Use Rounding)	Strategy
a $\begin{array}{r} 45 \\ \times 3 \\ \hline \end{array}$	$\begin{array}{r} \dots\dots\dots \\ \times \dots\dots\dots \\ \hline \end{array}$	Base Ten Blocks
b $\begin{array}{r} 78 \\ \times 9 \\ \hline \end{array}$	$\begin{array}{r} \dots\dots\dots \\ \times \dots\dots\dots \\ \hline \end{array}$	Rectangle Area Model
c $\begin{array}{r} 356 \\ \times 6 \\ \hline \end{array}$	$\begin{array}{r} \dots\dots\dots \\ \times \dots\dots\dots \\ \hline \end{array}$	Distributive Property
d $\begin{array}{r} 3,406 \\ \times 8 \\ \hline \end{array}$	$\begin{array}{r} \dots\dots\dots \\ \times \dots\dots\dots \\ \hline \end{array}$	Partial Products Algorithm
e $\begin{array}{r} 8,014 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} \dots\dots\dots \\ \times \dots\dots\dots \\ \hline \end{array}$	Standard Multiplication Algorithm

5 Complete using (<, =, or >):

- a 9×26 4×56 b 4×250 8×125
- c 431×4 624×6 d 5×294 6×245
- e 25×80 205×8 f 30×300 $3,012 \times 3$
- g 752×2 7×525 h 365×8 600×50
- i $8 \times 2,500$ 40×500

6 Ahmed's family bought 6 kilograms of meat. If the price of one kilogram is 335 pounds, how many pounds did the family pay?

7 An electrical appliance merchant wants to buy 8 television sets; the price of each set is 6,250 pounds.

How much money will the merchant pay for these television sets?

8 If a day is 24 hours, how many hours are in a week?

Accumulative Assessment

Up to Lesson 4

1 Choose the correct answer:

- a $5 \times (400 + 3 + 70) = 5 \times \dots$ (400,370 or 437 or 473 or 374)
- b $805 \times \dots = 3,220$ (4 or 6 or 7 or 10)
- c $5,000 + 20 + 3 = \dots$ (50,203 or 523 or 5,023 or 5,000,203)
- d If $8 \times \dots = 3 \times 8$, then $\dots = \dots$ (3 or 8 or 16 or 12)
- e The **greatest common factor** of **12** and **18** is $\dots$. (2 or 3 or 6 or 36)
- f $400 \times \dots = 16,000$ (4 or 40 or 400 or 4,000)
- g Two **weeks** and three **days** = $\dots$ **days**. (13 or 17 or 51 or 63)

2 Answer the following:

a Complete using (<, =, or >):

- 1 5×502 5×205 2 45 m $4,500 \text{ cm}$
- 3 20×50 8×125
- 4 $456,258 + 543,742$ The **greatest** 7-digit number
- 5 3×800 40×70

b Arrange the following numbers in a **descending order**:

236×5 , 235×6 , 325×4 , 625×2

- c A train has **8** cars. If the number of seats in one car is **64**,
how many seats does the train have?

Lesson 5

1 Find the product using the **rectangle area model**:

a $82 \times 20 =$

..... $\times$ =	 $\times$ =
..... + =	

b $30 \times 25 =$

..... $\times$ =	 $\times$ =
..... + =	

c $38 \times 60 =$

..... $\times$ =	 $\times$ =
..... + =	

d $90 \times 38 =$

..... $\times$ =	 $\times$ =
..... + =	

e $60 \times 96 =$

..... $\times$ =	 $\times$ =
..... + =	

f $37 \times 40 =$

..... $\times$ =	 $\times$ =
..... + =	

2 Use the **rectangle area model** to multiply:

a $83 \times 90 =$

b $35 \times 60 =$

c $48 \times 20 =$

d $40 \times 17 =$

e $60 \times 86 =$

f $68 \times 50 =$

3 Use the **Distributive Property** to solve the following problems:

a $90 \times 15 =$

.....

b $30 \times 57 =$

.....

c $80 \times 29 =$

.....

#####

[illegible]

[illegible]

100

Number of hauls	<i>P. setiferus</i> (%)	<i>P. setiferus</i> + <i>P. setiferus</i> + <i>P. setiferus</i> (%)
0	0	0
1	20	80
2	10	90
3	20	80
4	10	90
5	20	80
6	10	90
7	20	80
8	10	90
9	20	80
10	10	90

5 Find the product:

- | | |
|--------------------------|--------------------------|
| a $12 \times 60 =$ | b $80 \times 14 =$ |
| c $70 \times 25 =$ | d $90 \times 42 =$ |
| e $80 \times 55 =$ | f $30 \times 96 =$ |
| g $95 \times 60 =$ | h $80 \times 45 =$ |

6 Emad bought 20 pens of the same type. If the price of one pen is 95 piasters, what is the amount of money that Emad paid?

.....

.....

.....

.....

7 A merchant has 35 boxes of fruits. If each box contains 20 kilograms, what is the mass of all boxes?

.....

.....

.....

.....

8 Souad bought 20 meters of a piece of cloth. If the price of one meter is 65 pounds, what is the price of the whole piece of cloth?

.....

.....

.....

.....

Accumulative Assessment

Up to Lesson 5

1 Choose the correct answer:

- a If a square has a perimeter of **36** cm, then its **area** is cm^2 .
(24 or 9 or 12 or 81)
- b kg = 70,000 grams (7 or 70 or 700 or 7,000)
- c $30 \times \dots = 3,600$ (120,000 or 12 or 120 or 1,200)
- d The property used in: $8 \times (3 + 7) = (8 \times 3) + (8 \times 7)$ is the
Property. (Identity or Commutative or Associative or Distributive)
- e (8 **Hundreds** and 6 **Tens**) $\times 100 = \dots$.
(86,000 or 860,000 or 8,600 or 8,006,000)
- f The **prime** number that lies between **50** and **60**, and its **Ones** digit is
greater than its **Tens** digit is (51 or 53 or 57 or 59)
- g **2** and **7** are factors of the number (7 or 8 or 12 or 14)
- h $60 \times \dots = 300,000$ (500 or 5,000 or 50,000 or 500,000)

2 Answer the following:

a Find the result:

1 $45,268 + 15,832 = \dots$ 2 $80,600 - 25,087 = \dots$

3 $782 \times 4 = \dots$ 4 $90 \times 15 = \dots$

- b An apartment building has **20** floors. If each floor has **18** apartments, what is the total number of apartments in the building?
-
-



Assessment on Concept 1

1 Choose the correct answer:

a $60 \times \dots = 240$

(8 or 40 or 4 or 20)

b In the opposite model, $x = \dots$

(21 or 83 or 50 or 7) x

30	8
210	56

c If the price of one shirt is 58 LE, then the price of 5 shirts is LE.

(290 or 150 or 300 or 200)

d $537 \times 2 = \dots$

(1,614 or 1,074 or 1,164 or 1,064)

e If a library has 5 shelves, and each shelf contains 36 books, then the total number of books is

(41 or 150 or 180 or 210)

f In the opposite bar model, $c = \dots$

(360 or 3,600 or 1,300 or 130) 90

40	6
c	540

2 Answer the following:

a Match:

1 $1,673 \times 8$

• 2,800 a

2 30×80

• 13,384 b

3 40×70

• 2,400 c

b Find the area of a rectangular piece of land with a length of 274 meters and a width of 60 meters.

Unit 7

Multiplication and Division: Computation and Relationships

Concept 7.2

Dividing by 1-Digit Divisors

Lessons 6&7

1 Complete the following table:

Problem	Dividend	Divisor	Quotient	Remainder
a $8 \div 4$	.....	.....	.....	.....
b $\div$	9	2	.....	.....
c $\div$	.....	5	3	0
d $\div$	28	.....	7	0
e $36 \div 6$	.....	.....	.....	.....
f $\div$	35	.....	4	3
g $\div$	.....	4	6	1
h $\div$	31	5	.....	.....
i $42 \div 8$	.....	.....	.....	.....
j $\div$	48	.....	8	0

2 Find the quotient of:

a $90 \div 3 =$

c $600 \div 2 =$

e $450 \div 5 =$

g $1,800 \div 5 =$

i $2,400 \div 6 =$

b $64,000 \div 8 =$

d $27,000 \div 9 =$

f $400,000 \div 5 =$

h $540,000 \div 6 =$

j $3,500,000 \div 5 =$

3 Complete the following table:

Equation	Related Fact	Quotient
a $400 \div 4$		
b $8,000 \div 2$		
c $90,000 \div 3$		
d $420 \div 7$		
e $350 \div 5$		
f $3,600 \div 4$		
g $27,000 \div 9$		
h $240,000 \div 8$		
i $60,000 \div 3$		
j $18,000 \div 6$		

4 Complete using (<, =, or >):

- | | | | |
|-------------------|--------------------------------------|-------------------|--------------------------------------|
| a $450 \div 5$ | <input type="text"/> $350 \div 7$ | b $4,000 \div 5$ | <input type="text"/> $2,000 \div 5$ |
| c $1,000 \div 2$ | <input type="text"/> $400 \div 4$ | d $20,000 \div 4$ | <input type="text"/> $30,000 \div 6$ |
| e $20,000 \div 5$ | <input type="text"/> $24,000 \div 8$ | f $8,100 \div 9$ | <input type="text"/> $450 \div 5$ |
| g $1,500 \div 3$ | <input type="text"/> $2,400 \div 6$ | h $4,800 \div 6$ | <input type="text"/> $64,000 \div 8$ |
| i $400 \div 8$ | <input type="text"/> $300 \div 5$ | j $2,500 \div 5$ | <input type="text"/> $45,000 \div 9$ |

5 Complete the following:

- a If $5 \times 8 = 40$, then $4,000 \div 5 =$
- b If $6 \times 7 = 42$, then $42,000 \div 6 =$
- c If $3 \times 4 = 12$, then $120 \div 3 =$
- d If $2 \times 9 = 18$, then $180,000 \div 9 =$
- e If $5 \times 4 = 20$, then $20,000 \div 4 =$

- 6 Saleem brought 15 pancakes to give to four of his friends. How can Saleem divide the pancakes evenly?

- 7 A teacher has 21 candy bars and wants to distribute them equally among 5 students. How many candy bars will each student get?

- 8 32 people would like to attend a special event in Zamalek District. There are several different ways to go to this event. Participants can only choose one way to allow the whole group to go. Look at the means of transportation that they can use in the following table.

Means of Transportation	Number of People Allowed in Each Means of Transportation	Problem	Number of People Left
a Microbus	9		
b Tuk Tuk	3		
c Car	4		
d Van	7		

- 9 Essam wants to put 52 cups in boxes and ship them. Each box can hold 6 cups. How many boxes are needed to ship the cups?

- 10 Ahmed distributed 12,000 pounds equally among his three sons. What is the share for each son?

- 11 Emad spent 24,000 equally within six days. How many pounds did Emad spend in one day?

Accumulative Assessment

Up to Lesson 7

1 Choose the correct answer:

a If $8 \times 3 = 24$, then $2,400 \div 8 =$ (3 or 30 or 300 or 3,000)

b $3,200 \div 4$ $8,000 \div 8$ ($>$ or $=$ or $<$ or $\geq$)

c $3,200 \div$ $= 400$ (8 or 80 or 800 or 8,000)

d 8 kg and 45 grams = grams. (80,450 or 8,045 or 8,450 or 845)

e 5,000 Tens = Thousands. (5 or 50 or 500 or 5,000)

f If the perimeter of a square is 12 cm, then its area is cm^2 . (9 or 16 or 48 or 144)

g 3 and 4 are factors of the number (7 or 14 or 18 or 24)

h The remainder of $32 \div 6$ is (2 or 3 or 4 or 5)

i If $8 \times 4 = 32$, then $32,000 \div 8 =$ (400 or 4,000 or 40,000 or 8,000)

2 Answer the following:

a Find the quotient and remainder of the following:

1 $55 \div 6 =$

2 $43 \div 5 =$

3 $75 \div 9 =$

b A school has 240 students divided into 8 classes equally.

How many students are there in each class?

.....

.....

Lesson 8

1 Find the **quotient** in each of the following. Use the **rectangle area model**:

a $70 \div 5$

..... X =	 X =
-----------------------	-----------------------

$70 \div 5 = \dots\dots\dots$

b $64 \div 4$

..... X =	 X =
-----------------------	-----------------------

$64 \div 4 = \dots\dots\dots$

c $98 \div 2$

..... X =	 X =
-----------------------	-----------------------

$98 \div 2 = \dots\dots\dots$

d $56 \div 3$

..... X =	 X =
-----------------------	-----------------------

$56 \div 3 = \dots\dots\dots$

e $76 \div 6$

..... X =	 X =
-----------------------	-----------------------

$76 \div 6 = \dots\dots\dots$

f $68 \div 5$

..... X =	 X =
-----------------------	-----------------------

$68 \div 5 = \dots\dots\dots$

g $587 \div 4$

--	--	--

h $876 \div 6$

--	--	--

i $615 \div 5$

--	--	--

j $3,200 \div 4$

--

k $360 \div 4$

--

2 Use the **rectangle area model** to solve the following. Show your steps:

- a An organization is donating **89** books to a school. The books will be divided among **6** classes. How many books will each class get?

.....
.....

--

- b Rashida saved **545** pounds to buy a toy car. She was saving **5** pounds every day she worked. How many days did she have to work to save enough money to buy the toy car?

.....
.....

--

- c Amir bought a book of stickers. The book contains **92** stickers. Amir wanted to give the stickers to **4** of his friends. How many stickers will each of his friends get?

.....
.....

--

- d There are **492** cars that need to park at the stadium. The stadium has **4** parking lots, and the cars must be divided **evenly** among them. How many cars will be parked in each lot?

.....
.....

--

Accumulative Assessment

Up to Lesson 8

1 Choose the correct answer:

- a The **Additive Identity Element** is (0 or 1 or 2 or 3)
- b The **smallest odd prime** number is (0 or 1 or 2 or 3)
- c 4 liters and 15 milliliters = milliliters.
(4,150 or 4,015 or 40,015 or 415)
- d $80 \times \dots = 1,600$ (2 or 20 or 200 or 2,000)
- e 6 and 4 are **factors** of the number (8 or 12 or 16 or 18)
- f One **week** and two **days** = days. (7 or 9 or 12 or 22)
- g The **common multiple** of 6 and 10, and it lies between 20 and 40
is (24 or 30 or 36 or 40)

2 Answer the following:

- a Find the
- quotient**
- and complete the
- rectangle area model**
- :

1 $76 \div 4$

..... X =	 X =
-----------------------	-----------------------

$76 \div 4 = \dots$

2 $144 \div 6$

..... X =	 X =
-----------------------	-----------------------

$144 \div 6 = \dots$

- b Salma wants to divide 85 candy bars among 5 of her friends **equally**.
How many candy bars will each friend get?
-

Lesson 9

1 Use the **partial quotients algorithm** to divide:

a $52 \div 4$

b $90 \div 5$

c $92 \div 8$

d $936 \div 6$

e $289 \div 2$

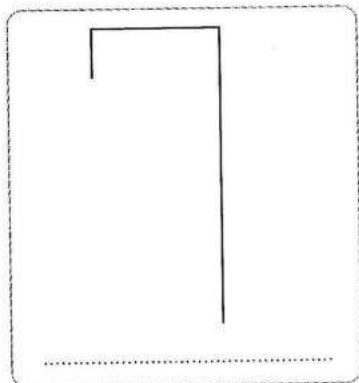
f $825 \div 3$

g $6,456 \div 4$

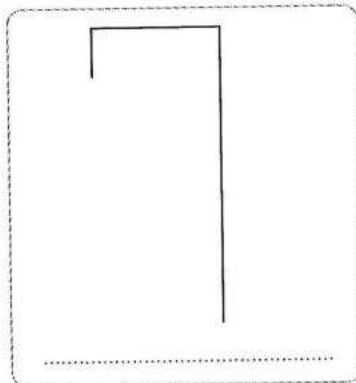
h $3,585 \div 5$

i $9,508 \div 7$

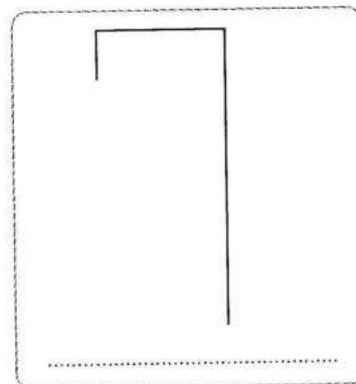
j $2,535 \div 5$



k $4,209 \div 6$



l $8,407 \div 7$



- 2 Write the **division problem** that matches each **rectangle area model**. Then, solve the problem using the **partial quotients algorithm**:

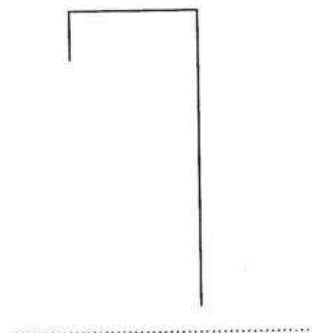
a

Rectangle Area Model

4	$4 \times 20 = 80$	$4 \times 3 = 12$
	20	3

Division Problem

Partial Quotients Algorithm



b

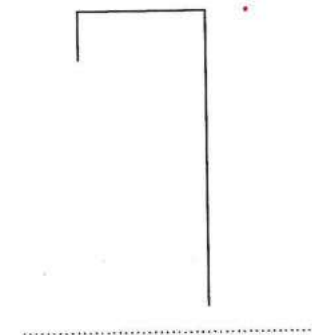
Rectangle Area Model

3	$3 \times 10 = 30$	$3 \times 7 = 21$
	10	7

The remainder is 2.

Division Problem

Partial Quotients Algorithm



c

Rectangle Area Model:

6	$6 \times 100 = 600$	$6 \times 40 = 240$	$6 \times 3 = 18$
	100	40	3

Division Problem:

Partial Quotients Algorithm



d

Rectangle Area Model

5	$5 \times 100 = 500$	$5 \times 30 = 150$	$5 \times 7 = 35$
	100	30	7

The remainder is 3.

Division Problem

Partial Quotients Algorithm



e

Rectangle Area Model

6	$6 \times 400 = 2,400$	$6 \times 60 = 360$	$6 \times 7 = 42$
	400	60	7

Division Problem

Partial Quotients Algorithm



- 3 A piece of land in the form of a **rectangle** has an area of **96** square meters. If its width is **8** meters, find its **length**.
(Use the **partial quotients algorithm**.)

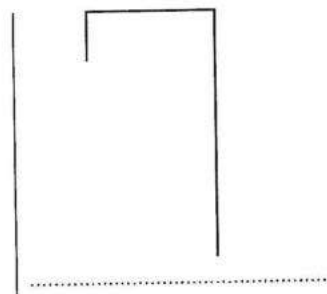
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- 4 Eman wants to distribute **1,548** among **6** persons **equally**.
What is the share of each person?
(Use the **partial quotients algorithm**.)

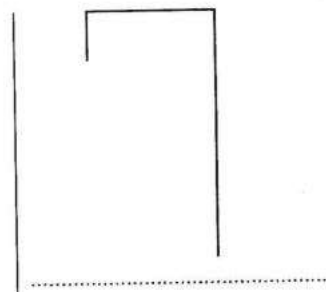
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- 5 A tourism company has prepared **5** buses to transport **175** tourists to visit the Pyramids area.
How many tourists will be in each bus?
(Use the **partial quotients algorithm**.)

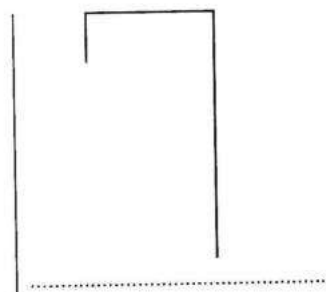
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Accumulative Assessment

Up to Lesson 9

1 Choose the correct answer:

- a $2,400 \div 4$ $3,000 \div 6$ ($>$ or $=$ or $<$ or $\geq$)
- b If $5a = 45$, then $a =$ (4 or 45 or 9 or 40)
- c The best unit for measuring the **length** of an **insect** is
(decimeters or meters or centimeters or millimeters)
- d $8 \times 500 = 4 \times$ (10 or 100 or 1,000 or 10,000)
- e If the area of a square is **25** cm^2 , then its **perimeter** is cm.
(5 or 10 or 20 or 100)
- f The **remainder** of $93 \div 6$ is (2 or 3 or 4 or 5)
- g The **GCF** of **12** and **18** is (2 or 3 or 6 or 36)
- h $(5 \times 6) + (5 \times 20) + (40 \times 6) + (40 \times 20) = 45 \times$
(62 or 26 or 46 or 8)

2 Answer the following:

a Use the **partial quotients algorithm** to divide:

1 $72 \div 4$

2 $245 \div 5$

3 $3,542 \div 6$

- b There are **72** students at the playground, and we need to divide them into **6** teams. How many students will be in each team?
-

Lessons 10&11

1 Complete the following table:

	Problem	The dividend is between	The quotient is between
a	$64 \div 2$	 and	 and
b	$87 \div 3$	 and	 and
c	$124 \div 4$	 and	 and
d	$105 \div 5$	 and	 and
e	$324 \div 3$	 and	 and
f	$864 \div 7$	 and	 and
g	$2,472 \div 6$	 and	 and
h	$3,648 \div 8$	 and	 and
i	$9,245 \div 5$	 and	 and
j	$7,206 \div 3$	 and	 and

2 Divide using the standard division algorithm:

a $65 \div 5 =$

```

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|
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```

b $96 \div 6 =$

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c $94 \div 4 =$

```

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-
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.....

```


3 Complete the following table:

	Problem	The Quotient is between	Number of Digits of the Quotient	Using the Standard Division Algorithm
a	$68 \div 4 =$	 and .....	.....	
b	$135 \div 5 =$	 and .....	.....	
c	$868 \div 7 =$	 and .....	.....	
d	$3,570 \div 5 =$	 and .....	.....	
e	$9,827 \div 3 =$	 and .....	.....	

- 4 A train has 784 passenger seats. If the train has 7 cars and each car has the same number of seats, how many passengers can be seated in each car? (Solve the problem using at least two different strategies.)

● First Strategy

● Second Strategy

- 5 There are 567 books in a library; they are distributed over 3 cupboards. How many books are there in each cupboard? (Solve the problem using at least two different strategies.)

● First Strategy

● Second Strategy

- 6 A school has 144 boys and 216 girls. They are divided into 8 classes equally. How many students are there in each class?

Accumulative Assessment

Up to Lesson 11

1 Choose the correct answer:

- a $45 \div 3$ $56 \div 4$ ($>$ or $=$ or $<$ or $\geq$)
- b $45,000 \div \text{.....} = 9,000$ (5,000 or 500 or 50 or 5)
- c 200 minutes = 3 hours and minutes. (10 or 20 or 30 or 40)
- d $9 \times 300 = \text{.....} \times 100$ (9 or 30 or 27 or 270)
- e $(45 \times 5) + (45 \times 60) = 45 \times \text{.....}$ (11 or 56 or 65 or 55)
- f The **remainder** when dividing 59 by 7 is (3 or 4 or 5 or 6)
- g The **LCM** of the two numbers 8 and 12 is (4 or 12 or 24 or 36)

2 Divide using the standard division algorithm:

a $92 \div 4 = \text{.....}$

```

.....
|
.....
-
.....
.....
-
.....
.....

```

b $340 \div 5 = \text{.....}$

```

.....
|
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-
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-
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.....

```

c $8,491 \div 7 = \text{.....}$

```

.....
|
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-
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-
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-
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.....
-
.....
.....

```

- 3 A hotel consists of 215 rooms distributed **equally** among 5 floors. How many rooms are there on each floor?
-
-



Assessment on Concept 2

1 Choose the correct answer:

- a The remainder of $37 \div 5$ is (4 or 3 or 1 or 2)
- b The quotient of $834 \div 3$ is (281 or 280 or 812 or 278)
- c In the opposite operation, the quotient is (4 or 157 or 39 or 1)
- d Adam wants to distribute 60 balloons equally among 12 children. Each child will get balloons. (3 or 4 or 5 or 6)
- e If $420 \div 7 = 60$, then the dividend is (420 or 60 or 7 or 10)
- f $8,100 \div 9 =$ (90 or 900 or 9,000 or 100)

$$\begin{array}{r} 39 \\ 4 \overline{) 157} \\ \underline{- 12} \\ 37 \\ \underline{- 36} \\ 1 \end{array}$$

2 Match:

- a $550 \div 5 =$ • 80 **1**
- b The remainder of $61 \div 7$ is • 110 **2**
- c $320 \div 4 =$ • 5 **3**

- 3 A merchant has 7 tons of fruit and wants to pack it into boxes that each contain 50 kilograms. How many boxes are needed to pack all the fruit?
-
-

Unit ⁸ Order of Operations

Concept 8.1 Order of Operations

Lessons 1&2

1 Follow the **order of operations** to solve the following problems:

a $15 + 5 + 7 =$
=

b $9 + 11 + 16 =$
=

c $9 - 6 - 3 =$
=

d $12 - 2 - 5 =$
=

e $8 + 7 - 10 =$
=

f $9 + 8 - 7 =$
=

g $7 + 9 - 6 =$
=

h $24 - 5 + 3 =$
=

i $15 - 7 + 2 =$
=

j $21 - 9 + 11 =$
=

k $5 \times 2 \times 9 =$
=

l $8 \times 5 \times 6 =$
=

m $45 \div 5 \div 3 =$
 $=$

n $63 \div 9 \div 7 =$
 $=$

o $5 \times 8 \div 4 =$
 $=$

p $6 \times 6 \div 9 =$
 $=$

q $5 \times 2 \div 5 =$
 $=$

r $48 \div 8 \times 5 =$
 $=$

s $72 \div 9 \times 6 =$
 $=$

t $32 \div 4 \times 5 =$
 $=$

2 Follow the **order of operations** to solve the following problems:

a $8 \times 5 + 7 =$
 $=$

b $9 \times 4 + 14 =$
 $=$

c $4 \times 8 - 5 =$
 $=$

d $4 \times 8 - 9 =$
 $=$

e $7 + 2 \times 9 =$
 $=$

f $6 + 3 \times 2 =$
 $=$

g $12 - 3 \times 3 =$
 $=$

h $25 - 3 \times 7 =$
 $=$

Unit 8 | Order of Operations

i $7 + 8 \div 2 =$
=

j $6 + 18 \div 3 =$
=

k $48 \div 8 + 5 =$
=

l $63 \div 7 + 21 =$
=

m $36 \div 9 - 3 =$
=

n $42 \div 7 - 5 =$
=

o $12 - 10 \div 2 =$
=

p $15 - 14 \div 7 =$
=

3 Follow the **order of operations** to solve the following problems:

a $8 + 5 + 7 + 3$
=
=

b $25 - 8 - 3 - 6$
=
=

c $2 \times 5 \times 3 \times 6$
=
=

d $48 \div 2 \div 4 \div 3$
=
=

4 Follow the **order of operations** to solve the following problems:

a $7 \times 3 + 5 \times 6$
=
=

b $6 \times 3 + 2 \times 5$
=
=

c $4 \times 8 - 3 \times 7$

=

=

d $9 \times 7 - 4 \times 6$

=

=

e $12 \div 4 + 15 \div 3$

=

=

f $18 \div 6 + 24 \div 8$

=

=

g $36 \div 9 - 24 \div 8$

=

=

h $45 \div 5 - 42 \div 7$

=

=

5 Follow the **order of operations** to solve the following problems:

a $6 \times 8 + 2 \times 5 + 4 \times 7$

=

=

=

b $3 \times 9 - 4 \times 2 - 5 \times 2$

=

=

=

c $24 \div 3 + 30 \div 6 + 24 \div 8$

=

=

=

d $48 \div 2 + 35 \div 7 - 64 \div 8$

=

=

=

e $5 + 4 \times 3 - 7$

=

=

=

f $40 - 4 + 2 \times 8$

=

=

=

g $3 \times 5 + 4 \times 3 - 9$

=

=

=

h $8 + 35 \div 5 - 3 \times 4$

=

=

=

6 Follow the **order of operations** to solve the following problems:

a $(5 + 7) \div 6$

=

=

=

b $4 \times (23 - 3)$

=

=

=

c $(10 + 80) \div 3 - 20$

=

=

=

d $17 \times (15 - 8) + 2$

=

=

=

e $(26 - 5 \times 2) \div 8$

=

=

=

f $29 - (5 + 1 \times 4)$

=

=

=

7 Use numbers and symbols to represent what happens in each problem and then solve it. Remember the order of operations:

- a** There were 194 persons at a concert. After the concert, 50 persons left in cars. The rest of them want to go home by microbus. If each microbus has seats for 9 persons, how many minibuses are needed for everyone to get home?

.....

.....

.....

- b** Bilal bought 6 bags of balloons. Each bag contains 18 balloons. He wants to give balloons to his friends at his birthday party. If he has 9 friends at the party, how many balloons will each friend get?

.....

.....

.....

- c** Fatima went to her favorite store in the market and bought 6 baskets of eggs. Each basket contains 8 eggs. Fatima used some eggs and left 38 eggs at the end of the day. How can Fatima determine how many eggs she used?

.....

.....

.....

- c** Ahmed buys fabric from **3 different** weavers to display in his **four** stores. Last week, he bought **12** meters from the first weaver, **28** meters from the second weaver, and **40** meters from the third weaver. He wants to display the same number of meters of new fabric in each store. How can Ahmed determine how many meters of fabric to display in each store?

- e** Rashid made **42** baked goods. He divided them **equally** between him and his brother and sister. He ate some of the baked goods he kept for himself and only **4** were left. How can Rashid determine how many biscuits he ate?

- f** A furniture company manufactures **two** types of chairs.
 Model (A): **48** nails, **24** metal rings, and **21** pieces of wood.
 Model (B): **52** nails, **32** metal rings, and **26** pieces of wood.
 The company has assembled **15** Model (A) chairs and **7** Model (B) chairs today.

How can the company determine how many nails, metal rings, and wood pieces they used in total?



Assessment on Concept 1

1 Choose the correct answer:

a $4 + 6 \times 2 =$ (20 or 16 or 12 or 26)

b $(5 + 3) \times (8 - 4) =$ (32 or 25 or 60 or 8)

c If a square has a side length of 8 cm, its area is cm^2 .
(16 or 32 or 64 or 40)

d $40 \times$ = 20,000
(5 or 50 or 500 or 5,000)

e $(3 \times 8) \times 7 = 3 \times (8 \times 7)$ "..... Property"
(Distributive or Commutative or Associative or Identity)

2 Follow the standard order of operations to solve:

a $9 + 3 - 5$
=
=
=

b $8 \times 6 \div 4$
=
=
=

c $9 + 6 \div 3$
=
=
=

d $9 - 4 \times 2$
=
=
=

e $60 \times (8 + 4) \div 6 + 3 =$
=
=
=

3 Fatima has 4 pen cases, each containing 6 pens, and 3 pen boxes, each containing 5 pens. How many pens does she have in total?

.....

.....

Assessments on Units



Assessment on Unit 1

First: Choose the correct answer:

1 Three million, three thousand, three = (In standard form)

- a 30,303 b 3,030,030 c 3,003,003 d 3,300,300

2 23,080,250 = (In word form)

- a Three hundred sixty million, eighty thousand, two hundred fifty
b Twenty-three million, eight hundred thousand, two hundred fifty
c Twenty-three million, eighty thousand, two hundred fifty
d Three hundred sixty million, eight hundred, two thousand, fifty

3 706,200,405 = (In expanded form)

- a $700,000,000 + 6,000,000 + 200,000 + 400 + 5$
b $700,000,000 + 6,000,000 + 200 + 40 + 5$
c $70,000,000 + 6,000,000 + 20,000 + 400 + 5$
d $700,000,000 + 6,000,000 + 200,000 + 40 + 5$

4 Three milliard, five hundred ninety thousand, three hundred five
= (In standard form)

- a 3,000,590,305 b 3,590,305
c 3,590,000,305 d 3,005,900,305

5 $(3 \times 100,000,000) + (8 \times 10,000,000) + (6 \times 10,000) + (2 \times 100)$
= (In standard form)

- a 300,860,200 b 308,060,200
c 380,060,200 d 380,600,200

- 6 is the smallest number formed from 10 digit.
 a A million b Ten million c Hundred million d A milliard
- 7 The value of the digit 3 in the number 532,689,127 is
 a 300,000 b 3,000,000 c 30,000,000 d 300,000,000
- 8 $40,225,885 < \dots\dots\dots$
 a 8,688,988 b 41,200,800 c 9,999,999 d 39,009,000
- 9 $258,456 \approx \dots\dots\dots$ (To the nearest 10,000)
 a 250,000 b 260,000 c 200,000 d 300,000
- 10 The **smallest** whole number that can be rounded to the nearest 100 so that the result is 2,300 is
 a 2,350 b 2,250 c 2,301 d 2,299

Second: Complete the following:

- 1 The place value of the digit 6 in 658,478,203 is the
 2 200 Hundred = Thousand
 3 $2 \text{ milliard} + 7 \text{ million} + 225 \text{ thousand} + 102 = \dots\dots\dots$ (In word form)
 4 The digit 4 in 248,237,752 is in the place.
 5 The value of the digit 5 in the Hundred Thousands place is
 6 $3,000,000 = \dots\dots\dots$ thousand
 7 Decompose: $7,305,057 =$
 $(7 \times \dots\dots\dots) + (3 \times \dots\dots\dots) + (5 \times \dots\dots\dots)$
 $+ (5 \times \dots\dots\dots) + (7 \times \dots\dots\dots)$
 8 Nine milliard, seven hundred five million, thirty thousand, six
 $= \dots\dots\dots$ (In standard form)
 9 $654,215 \approx \dots\dots\dots$ (To the nearest 10,000)
 10 $\approx 45,000$ (To the nearest 1,000)
 (Complete with the **smallest** number possible)

Units Revision

Third: Compare using ($<$, $=$, or $>$):

① 200,002,780

② $(5 \times 100,000,000) + (5 \times 1)$

③ 620,000,602

④ Three hundred million, three hundred

⑤ The value of the digit 8 in the

Hundred Thousands place

200,020,078

550,000,000

62 million, 602

300,300,000

800,000

Fourth: Arrange the following numbers in an **ascending** order and write them in **standard form**:

Number	Standard Form	Order
30,000,450		a
$(3 \times 1,000,000) + (4 \times 100) + (5 \times 1)$		b
Three hundred million, four hundred, fifty		c
$50 + 400 + 3,000,000,000$		d
30 million, 450 thousand		e

Fifth: Write each of the following numerical forms in **standard form**, then round the number to the nearest **100**:

Numerical Form	Standard Form	To the Nearest 100
a Five thousand, five hundred ninety-nine		
b 4 thousand, 985		
c $90,000 + 400 + 30 + 2$		
d $(8 \times 10) + (3 \times 1)$		



Assessment on Unit 2

First: Choose the correct answer:

1 $25 + 152 = 152 + 25$

(..... Property)

a Identity Element

b Associative

c Commutative

d Distributive

2 $63 + (15 + 95) = (63 + 15) + 95$

(..... Property)

a Identity Element

b Associative

c Commutative

d Distributive

3 $258 + 0 = 258$

(..... Property)

a Identity Element

b Associative

c Commutative

d Distributive

4 $456 + 998 = 454 + \dots$

a 999

b 990

c 1,000

d 996

5 $369 + 254 = \dots$

a $369 + 200 + 50 + 4$

b $369 + 2 + 4 + 5$

c $369 + 25 + 4$

d $369 + 2 + 54$

6 The equation that represents the opposite bar model is

a $x + 120 = 750$

b $750 - x = 150$

c $x - 150 = 750$

d $x = 750 + 150$

750	
x	150

7 The bar model that represents this equation " $32 - y = 15$ "

is

a

32	
15	y

b

15	
32	y

c

y	
15	32

d

47	
32	y

Units Revision

- 8 $158,456 + 252,234 =$
 a 300,780 b 410,690 c 300,690 d 790,410
- 9 If $x + 245 = 786$, then $x =$
 a $245 + 786$ b $786 - 245$ c $245 + 541$ d $786 - 541$
- 10 If $452 - y = 152$, then $y =$
 a $452 + 152$ b $152 + 200$ c $452 - 152$ d $452 - 200$

Second: Complete the following:

- 1 $45 + 21 =$ + 45 (..... Property)
- 2 $(45 + 25) + 15 +$ = + (..... + 15) + 13
 (..... Property)
- 3 $254 +$ = 254 (..... Property)
- 4 $25,475 + 85,235 =$
- 5 $600,800 - 365,247 =$
- 6 If $x + 258 = 500$, then $x =$
- 7 If $458 + y = 600$, then $y =$
- 8 If $m - 524 = 214$, then $m =$
- 9 If $842 - z = 600$, then $z =$
- 10 $2,456 + 3,375 =$ $\approx$ (To the nearest 1,000)

Third: Answer the following:

- a In the first week, 6,245 tourists visited the Pyramids. In the second week, 5,375 tourists visited the Pyramids.

How many tourists visited the Pyramids in the two weeks?

Bar Model:

Equation:

Solution:

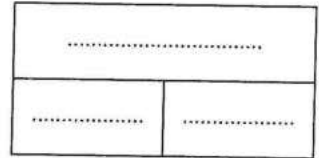
.....	
.....	

- b Sarah had 1,025 pounds. She bought a dress for 675 pounds.
How many pounds does Sarah have left?

Bar Model:

Equation:

Solution:



- c A road with a length of 915 meters was paved over three days. On the first day, 345 meters were paved, and on the second day, 290 meters were paved. How many meters were paved on the third day?

.....

.....

.....



Accumulative Assessments

on Units 1&2

Assessment 1

1 Complete the following:

- a $7,000,021 = \dots$ Millions + $\dots$ Thousands + $\dots$
- b $245 + 243 = \dots + 245$
- c $0 + \dots = 9$ "..... Property"
- d 50 Ten Thousands =

2 Choose the correct answer:

- a When approximating the number 3,999 to the nearest Ten,
it is (4,900 or 4,000 or 5,990 or 5,000)
- b $45 + 0 = 45$ (..... Property)
(Distributive or Identity Element or Commutative or Associative)
- c $5,000 + 20 + 3 = \dots$
(50,203 or 523 or 5,023 or 5,000,203)
- d The place value of the digit 7 in 9,657,123 is the
(Millions or Millions or Hundreds or Thousands)

3 Compare using (<, =, or >):

- a 900 Thousands 90 Millions
- b $6,000,000,000 + 4,000 + 2$ $6,000,000 + 80,000 + 100$
- c $456,258 + 543,742$ The greatest 7-digit number
- d $10,000 + 8,000 + 200 + 80 + 7$ $18,654 - 367$

4 Answer the following questions:

- a The number of girls in a school is 458, and the number of boys is 367.
What is the total number of students in this school?
-
-

- b Salma was counting the ants in a colony. She counted 1,525 ants on Monday, 19,750 ants on Tuesday, and 3,705 ants on Wednesday. If there are 30,520 ants in the colony, how many ants does she still need to count?
-
-

c Find the result:

$$\begin{array}{r} \boxed{1} \quad 235,147 \\ + 235,448 \\ \hline \end{array}$$

$$\begin{array}{r} \boxed{2} \quad 65,254 \\ - 36,142 \\ \hline \end{array}$$

Assessment 2

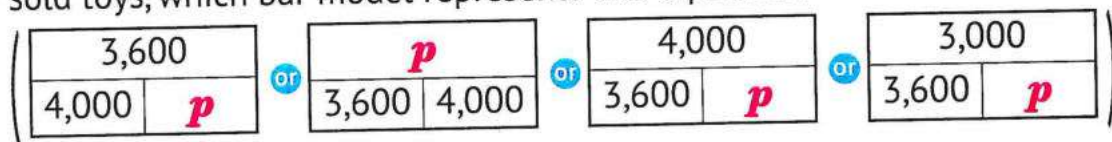
1 Complete the following:

- a $27,937 \approx 30,000$ (To the nearest)
- b $27 + 19 = 19 + \dots$ "..... Property"
- c $245 + (755 + 354) = (245 + \dots) + 354$
- d Six milliard, eight hundred fifteen million, four hundred thousand, thirty
= (Standard Form)

2 Choose the correct answer:

- a $(8 \times 100,000,000) + (8 \times 1,000) = \dots$
(88,000,000 or 808,000 or 800,008,000 or 800,800,000)

- b A store had 4,000 toys. 3,600 of them are left. If p represents the number of sold toys, which bar model represents this equation?



- c If the **place value** of the digit 5 is the Ten Thousands, then its **value** is
 (50 or 500 or 50,000 or 50,000,000)

- d $75 - 49 = 74 -$
 (50 or 48 or 98 or 99)

3 Compare using (<, =, or >):

- a Five hundred seventy thousands, ninety-eight $500,000 + 70,000 + 90 + 8$
- b Six milliard, two hundred thousands $6,000,000,000 + 200$
- c Four hundred fifty two millions, six hundred ninety-five $4,520,003,695$
- d $290 + 530$ $732 + 88$

4 Answer the following questions:

- a Write the number 6,254,835 in the **decomposed** form.

.....

.....

- b Sarah had 6,250 pounds. She bought a mobile for 4,630 pounds.
 How many pounds are left with Sarah?

.....

.....

- c **Arrange the following numbers in an ascending order:**

354,456 , 345,456 , 345,465 , 354,465

..... , ,



Assessment on Unit 3

First: Choose the correct answer:

- 1 The best unit for measuring the **height** of **a class** is
 a meters b centimeters c millimeters d kilometers
- 2 The best unit for measuring **a dog's mass** is
 a grams b centigrams c milligrams d kilograms
- 3 The best unit for measuring **a car's fuel tank** is
 a liters b centiliters c milliliters d gram
- 4 The time is now **10:25**. What will the time be after **fifty** minutes?
 a 10:50 b 10:15 c 11:25 d 11:15
- 5 **120 hours** = **days**
 a 2 b 6 c 5 d 12
- 6 The is one of the **graduated scales** that we see in our daily lives.
 a car b mobile phone c balance d calculator
- 7 The **height** of Cairo Tower is **198** meters. How high is it in centimeters?
 a 198 cm b 1,980 cm c 19,800 cm d 198,000 cm
- 8 If Shaimaa's mass is **65** kilograms and **500** grams, then her mass in grams is
 a 565 g b 650,500 g c 65,000,500 g d 65,500 g
- 9 "**20 to 3**" is represented on the digital clock as
 a 3:20 b 2:40 c 2:20 d 4:20
- 10 If a fish tank contains **20** liters and **250** milliliters of water, then the **volume** of the water in the tank in milliliters is
 a 20,250 mL b 2,250 mL c 25,020 mL d 2,025 mL

Units Revision

Second: Complete the following:

- 1 10 meters and 25 centimeters = centimeters
- 2 20,015 meters = kilometers and meters
- 3 15,040 grams = kilograms and grams
- 4 400,020 milliliters = liters and milliliters
- 5 4 kilometers = meters
- 6 20,000 grams = kilograms
- 7 500 liters = milliliters
- 8 $6:45 + 2:28 =$:
- 9 $8:00 - 7:37 =$:
- 10 250 minutes = hours and minutes

Third: Compare using (<, =, or >):

- 1 7 weeks 45 days
- 2 3 days 46 hours
- 3 2 hours 150 minutes
- 4 4 minutes 240 seconds

Fourth: Arrange the following lengths in an ascending order:

400 cm , 40 m , 4 dm , 4 km

Fifth: Salah has been in football training for two hours and 30 minutes. If Salah goes to training three days a week, how many minutes does he spend in training per day? And how many minutes does Salah spend in training over 9 days?

Accumulative Assessments

on Units 1-3

Assessment 1

1 Choose the correct answer:

- a $12,000 = 10$ times of (120 or 1,200 or 12,000 or 120,000)
- b 50 m, 65 cm = cm (5,650 or 50,650 or 5,065)
- c $27,957 \approx 30,000$ (To the nearest) (10 or 100 or 1,000 or 10,000)
- d Which of the following represents the Commutative Property of Addition?
 ($635 + 492 = 492 + 635$ or $0 + 847 = 847$
 or $(18 + 2) + 16 = 36$ or $1 + 131 = 132$)
- e The Additive Identity is (0 or 1 or 2 or 3)
- f If $9 + x = 27$, then $x =$ (927 or 36 or 18 or 3)
- g A kilogram is a measurement unit of the
 (volume or height or mass or capacity)

2 Compare using (<, =, or >):

- a Four hundred fifty-two million, six hundred ninety-five 4,520,003,695
- b 4,000 grams 40,000 kilograms
- c 2 100,000 - 99,999
- d 72 hours 3 days

3 Answer the following questions:

- a Write the number (2 million, 235 thousand, 624) in the expanded form.

.....

.....

- b The distance between Samah's house and her school is 2 km.

What is the distance in meters, decimeters, and centimeters?

2 km = m = dm = cm

- c Salma trains to swim for an hour and 15 minutes. If she starts training at 5:35, when will she finish training?

.....

- d $3:45 + 2:15 = \dots\dots\dots : \dots\dots\dots$

Assessment 2

1 Choose the correct answer:

- a If $x - 20 = 30$, then $x = \dots\dots\dots$ (10 or 600 or 50 or 2,030)
- b $155 \text{ cm} = \dots\dots\dots$ (1 dm and 55 cm or 15 dm and 5 cm
 or 10 dm and 55 cm or 15 dm and 50 cm)
- c $2,617 - 1,716 = \dots\dots\dots$ (1,901 or 1,099 or 1,101 or 901)
- d The Additive Identity Element is (0 or 1 or 2 or 3)
- e $8 \text{ L} = \dots\dots\dots \text{ mL}$ (8 or 8,000 or 80 or 800)
- f The largest number that can be formed from the digits 5, 3, 4, 7, 0, and 6 is (534,706 or 765,430 or 706,543 or 304,567)
- g The smallest 9-digit number < (one milliard or 100 million or 999 thousand or 99 million)
- h The **gram** is the best unit for measuring the **mass** of a (ring or child or car or chair)

2 Compare using (<, =, or >):

- | | | |
|--|----------------------|----------------|
| a $(3 \times 1,000,000,000) + (3 \times 10)$ | <input type="text"/> | 3,000,003,000 |
| b 23,023 mL | <input type="text"/> | 23 L, 23 mL |
| c A milliard | <input type="text"/> | 1,000,000,0000 |
| d 1,000 mL | <input type="text"/> | 100 liters |

3 Match:

- | | | |
|--------------------|--------------|---|
| a 2 days, 12 hours | • 60 days | 1 |
| b 8 weeks, 4 days | • 60 minutes | 2 |
| c 1 minute | • 60 hours | 3 |
| d 1 hour | • 60 seconds | 4 |

4 Answer the following questions:

- a The fish tank can be filled with 50 liters of water. If the tank contains 35 liters and 130 milliliters, how much water do we need to fill the tank?

- b If the mass of Hala is 65 kg and 250 g, what is her mass in grams?



Assessment on Unit 4

First: Choose the correct answer:

- 1 A rectangle has a length of 8 cm and a width of 6 cm. Its **perimeter** is cm.
a $8 + 6 + 8 + 6$ b $8 \times 6 \times 8 \times 6$ c $8 \times 6 \times 2$ d $8 + 6 + 2$
- 2 A rectangle has a length of 9 cm and a width of **one third** its length, then its **area** = cm^2 .
a 12 b 27 c 24 d 36
- 3 A square has an area of 64 cm^2 , then its **perimeter** is cm.
a 8 b 16 c 32 d 64
- 4 A square has a perimeter of 28 cm, then its **area** is cm^2 .
a 49 b 14 c 7 d 21
- 5 A rectangle has a perimeter of 24 cm and a length of 9 cm, then its **area** is cm^2 .
a 3 b 31 c 12 d 27
- 6 Which of the following is a formula for the **perimeter of a rectangle**?
a $P = L + W + 2$ b $P = (L \times W) \times 2$
c $P = (L \times 2) + (W \times 2)$ d $P = (L \times W) + 2$
- 7 Which of the following is a formula for the **perimeter of a rectangle**?
a $P = L + W + L + W$ b $P = L \times 2 \times W \times 2$
c $P = (L + 2) \times (W + 2)$ d $P = (L + W) + 2$
- 8 Which of the following is a formula for the **area of a rectangle**?
a $A = L \times W$ b $A = L \times W \times 2$
c $A = L + W$ d $A = L + W + 2$

9 The area of a rectangle whose length is 9 cm and its width is 4 cm is equal to the area of a square that has a perimeter of cm.

- a 24 b 36 c 13 d 18

10 The perimeter of a square that has an area of 25 cm^2 is equal to the perimeter of a rectangle whose dimensions are

- a 12 cm, 13 cm b 8 cm, 12 cm
c 6 cm, 4 cm d 5 cm, 5 cm

Second: Complete the following:

1 A rectangle has a length of 15 m and a width of 10 m. Its perimeter is

2 If a square has a 6 cm side length, then its perimeter is

3 A square whose sides are 7 mm has a surface area of mm^2 .

4 A rectangle has a length of 8 cm and a width of 4 cm. Its surface area is cm^2 .

5 A rectangle has a perimeter of 18 cm and a length of 7 cm, then its area is cm^2 .

6 If a rectangle has an area of 72 cm^2 and a width of 8 cm, then its perimeter is

7 If a square has a perimeter of 36 cm, then its side length is cm.

8 If a square has an area of 36 cm^2 , then its side length is cm.

9 If a square has a perimeter of 16 cm, then its area is cm^2 .

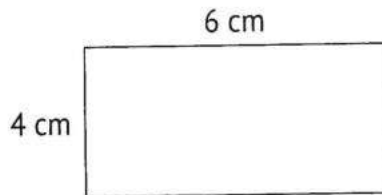
10 If a square has an area of 64 cm^2 , then its perimeter is cm.

Third: Answer the following:

1 Calculate the **area** and **perimeter** of each of the following shapes:

(Show your steps.)

a



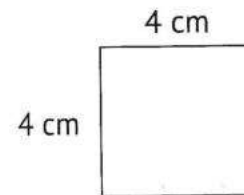
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.....

.....

b



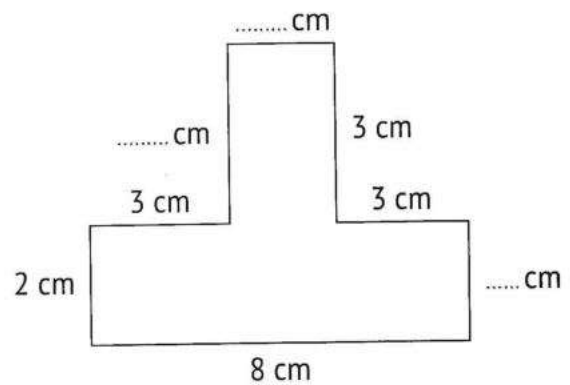
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.....

.....

c



.....

.....

.....

.....

.....

2 Adam has a **rectangular** computer keyboard that is **40 cm** long and **15 cm** wide. How can Adam calculate the **perimeter** of the keyboard?

.....

.....

Accumulative Assessments

on Units 1-4

Assessment 1

1 Choose the correct answer:

- a A square has a side length of 6 cm, then its **perimeter** is cm.
(12 or 24 or 36 or 48)
- b 3 weeks and 1 day = days.
(73 or 55 or 22 or 11)
- c Using the opposite bar model, $m =$
(726 or 326 or 274 or 1,152)
- d $27,957 \approx 30,000$ (To the nearest) (101 or 100 or 1,000 or 10,000)
- e A rectangle has a length of 7 cm and a width of 5 cm. Its **perimeter** is cm.
(97 or 13 or 35 or 24)
- f 4 liters and 15 milliliters = milliliters
(4,150 or 4,015 or 40,015 or 415)
- g The Additive Identity is
(1 or 0 or 10 or 60)
- h 12 Millions + 15 Thousands + 20 =
(201,512 or 20,015,012 or 121,520 or 12,015,020)

526	
200	m

2 Compare using (<, =, or >):

- a $456,258 + 543,742$ The greatest 7-digit number
- b 1 milliard 1,000,000,000
- c 6 min, 4 sec 4 min, 6 sec
- d The perimeter of a square of side length 6 cm The perimeter of a rectangle of dimensions 7 cm and 5 cm

3 Answer the following questions:

- a** A **square** picture has a side length of **30** cm. What is the **perimeter** of the frame for this picture?

.....

.....

- b** Mohamed bought a laptop for **5,250** LE and a mobile for **2,750** LE. If he had **10,000** LE, how much money is he left with him?

.....

.....

- c** A **rectangular** room is **10** meter long and **5** meter wide. Find the **perimeter** and **area** of the room.

.....

.....

Assessment 2

1 Choose the correct answer:

- a** 5 m, 5 dm = dm (10 or 55 or 505 or 5,005)

- b** 74,632 $\approx$ (To the nearest 1,000)

(70,000 or 74,000 or 75,000 or 76,000)

- c** $84 + 37$ (To the nearest 10): (110 or 120 or 130 or 140)

- d** Omar had **4,500** pounds. After two years, the amount he had became ten times more. How much money does Omar have now?

(9,000 or 4,510 or 45,000 or 45,004,500)

- e The **smallest 6-digit even** number is
 (999,998 or 100,003 or 100,000 or 102,254)
- f The best unit for measuring the **length** of an **insect** is
 (decimeters or meters or centimeters or millimeters)
- g A square has a side length of 8 cm, then its area is cm^2 .
 (88 or 32 or 64 or 16)

2 Compare using (<, =, or >):

- | | | |
|-----------------------------------|----------------------|----------------|
| a 900 Thousands | <input type="text"/> | 90 Millions |
| b $10,000 + 8,000 + 200 + 80 + 7$ | <input type="text"/> | $18,654 - 367$ |
| c The number of days of the week | <input type="text"/> | 10 |
| d 23,023 mL | <input type="text"/> | 23 L, 23 mL |

3 Answer the following questions:

- a A **square** picture has a side length of 8 cm. Hussein wants to make a piece of glass to cover this picture, what is the area of the glass picture?

- b $28 \text{ m and } 35 \text{ cm} + 37 \text{ dm and } 5 \text{ cm} = \text{..... cm.}$



Assessment on Unit 5

First: Choose the correct answer:

- 1 The equation $18 = 3 \times b$ represents the comparison
a 18 is 6 times more than b b 3 is 18 times more than b
c 18 is 3 times more than b d b is 3 times more than 18
- 2 $8 + 8 + 8 + 8 + 8 =$
a 8×8 b $8 + 8$ c $8 + 5$ d 8×5
- 3 $6 \times 4 =$
a $6 + 6 + 6 + 6$ b $6 \times 6 \times 6 \times 6$
c $4 + 4 + 4 + 4$ d $4 \times 4 \times 4$
- 4 If $5 \times 7 = x$, then
a x is 7 times more than 7
b x is 5 times more than 7
c 5 is 7 times more than x
d x is 5 times more than 5
- 5 The equation that represents "12 is 3 times as many as m " is
a $12 = 3 \times m$ b $m = 3 \times 12$
c $3 = 12 \times m$ d $m = 36 \times 3$
- 6 The equation that represents "28 is 4 times greater than n " is
a $28 = 4n$ b $28n = 4$
c $28 = 4 + n$ d $28 - n = 4$
- 7 If $8 \times 5 = a \times 8$, then $a =$
a 40 b 8 c 5 d 64

8 $200 \times \dots = 10,000$

a 5

b 50

c 500

d 5,000

9 $8 \times 5 \times 4 = (8 \times 5) \times 4 = \dots \times 4$

a 40

b 8

c 20

d 10

10 $8 \times 500 = 40 \times \dots$

a 5

b 100

c 10

d 1,000

Second: Complete the following:

1 $3 \times 4 \times 5 = 3 \times \dots$

2 $9 \times 3 = \dots + \dots + \dots$

3 The equation that represents "36 is 4 times greater than n " is $\dots$

4 If $5x = 35$, then $x = \dots$

5 $20 \times 50 = 50 \times \dots$

6 $\dots = 80 \times 500$

7 $600 \times \dots = 30,000$

8 $(5 \times 8) \times 6 = \dots \times \dots = \dots$

9 $6 \times 30 = 18 \times \dots = \dots$

10 $9 \times \dots = 36 \times 100 = \dots$

Third: Write equations for the following comparisons.

Use **letters** to represent the **unknown**, then find their **values**:

1 m is 8 times greater than 6.

Equation: $\dots$ Solution: $\dots$

2 24 is 8 times more than n .

Equation: $\dots$ Solution: $\dots$

3 21 is a times as many as 3.

Equation: $\dots$ Solution: $\dots$

4 x is 6 times greater than 7.

Equation: $\dots$ Solution: $\dots$

Fourth: Answer the following:

- a Mahmoud has 20 crayons, which is 5 times more than the number of crayons that Hazem has. How many crayons does Hazem have?

Write a multiplication equation representing this problem, and then solve it.

- b Nader has 12 oranges. Write an equation using the Commutative Property of Multiplication to describe the two ways in which he can arrange the oranges.

- c Use the Associative Property of Multiplication to calculate the number of marbles in the following picture.



Accumulative Assessments

on Units 1-5

Assessment 1

1 Choose the correct answer:

- a - 420 = 120 (300 or 440 or 540 or 500)
- b $36 + 35 = 35 + 36$. The property used is the Property.
(Identity Element or Commutative or Associative or Distributive)
- c 9 m, 2 cm = cm (92 or 11 or 902 or 209)
- d The number that comes just **before** 9,000,000 is
(999,999 or 8,000,000 or 8,900,000 or 8,999,999)
- e The digit **8** in 214,284,697 is in the place.
(Ones or Tens or Ten Thousands or Ten Millions)
- f $91,024 + 32,549 =$
(123,563 or 321,547 or 123,573 or 123,654)
- g 5,000 milliliters = liters. (5 or 50 or 500 or 5,000)
- h If $3x = 9$, then $x =$ (3 or 27 or 12 or 6)

2 Compare using (<, =, or >):

- | | | |
|--|----------------------|---|
| a 3,000 m | <input type="text"/> | 3 km |
| b The area of a square with side length 6 cm | <input type="text"/> | The area of a rectangle with dimensions 8 cm and 4 cm |
| c 10 Hundreds | <input type="text"/> | 20 Tens |
| d 30×100 | <input type="text"/> | 300 Hundreds |

3 Answer the following questions:

- a A rectangular painting is 5 meters in length and 2 meters in width. Find the **perimeter** of the necessary frame for this painting.
-
-

- b If the mass of Hala is 37 kg and 35 g, what is her mass in **grams**?
-
-

Assessment 2

1 Choose the correct answer:

- a The Additive Identity Element is (0 or 1 or 10 or 100)
- b $10\text{ cm}, 8\text{ mm} = \dots\dots\dots\text{ mm}.$ (18 or 180 or 108 or 90)
- c A rectangle has a length of 5 cm and a width of 3 cm, its perimeter is cm. (8 or 15 or 16 or 30)
- d The equation that represents "5 times greater than 3" is
($x = 3 + 5$ or $x = 3 \times 5$ or $5x = 3$ or $3x = 5$)
- e Four milliard, six hundred five million, ninety thousand, fifteen =
(4,065,090,015 or 4,650,900,015 or 4,605,090,015 or 9,506,415)
- f The is the measurement of the length around the shape.
(perimeter or area or square or $S \times S$)
- g $8 + 8 + 8 + 8 = \dots\dots\dots$ ($8 + 8$ or 8×8 or 8×4 or $8 + 4$)
- h $7 \times (3 \times 5) = (\dots\dots\dots \times 3) \times 5$ (21 or 7 or 5 or 3)

2 Compare using (<, =, or >):

- | | | |
|-----------------------|----------------------|-----------------------------|
| a 240 | <input type="text"/> | 6×400 |
| b 7,000 g | <input type="text"/> | 18 kg |
| c 5 Millions | <input type="text"/> | 5,000 Hundreds |
| d $456,258 + 543,741$ | <input type="text"/> | The greatest 7-digit number |

3 Answer the following questions:

- a Ola's age is **three times** Maha's age. If Maha is **5** years old, then how old is Ola?

.....

.....

- b A city is in the shape of a **rectangle**. It is **4** kilometers wide and **8** kilometers long. What is the **area** of this city in m^2 ?

.....

.....

- c The fish tank can be filled with **100** liters of water. If the tank contains **35** liters and **750** milliliters, how much water do we need to fill the tank?

.....

.....

في
اللغة
العربية
للصف الرابع الابتدائي

احرص
على اقتناء كتاب
الأستاذ



Assessment on Unit 6

First: Choose the correct answer:

- 1 The number of **factors** of 16 is
a 3 **b** 4 **c** 5 **d** 6
- 2 17 is a **prime** number because
a it has one factor only **b** it has two factors only
c it has no factors **d** it has more than two factors
- 3 The number that has the **factors** (1, 2, 3, 4, 6, 8, 12, 24) is
a 8 **b** 12 **c** 24 **d** 36
- 4 The **smallest odd prime** number is
a 0 **b** 1 **c** 2 **d** 3
- 5 The **greatest common factor** of 24 and 36 is
a 6 **b** 12 **c** 4 **d** 3
- 6 is a **common multiple** of 8 and 6.
a 12 **b** 16 **c** 48 **d** 36
- 7 If $6 \times 8 = 48$, then
a 48 is a multiple of 6 and 8 **b** 48 is a factor of 6
c 48 is the sum of 6 and 8 **d** 6 is a factor of 8
- 8 is an **odd** number and a **multiple** of the two numbers 5 and 7.
a 70 **b** 49 **c** 35 **d** 25
- 9 is an **even** number and a **multiple** of the two numbers 5 and 3.
a 15 **b** 45 **c** 60 **d** 50
- 10 is an **even** number, and (2, 3, 6, 9) are of its **factors**.
a 30 **b** 24 **c** 45 **d** 36

Second: Complete the following:

- 1 The **factors** of 14 are
- 2 The **smallest odd prime** number is
- 3 The **prime numbers** between 20 and 40 are, and
- 4 The number that has **two factors only** is called a number.
- 5 The **smallest two-digit prime** number is
- 6 2 is a factor of a number if the **Ones** digit of this number is
- 7 Multiples of 6 up to 20 are
- 8 The **common multiples** of 4 and 6 between 20 and 50 are
- 9 The relationship between the numbers 5, 6, and 30 is that 30 is a of 5 and 6.
- 10 is a prime number and the sum of its factors is 8.

Third: Find the **greatest common factor** of 40 and 32:

The factors of 40:

The factors of 32:

The **common factors** are:

The **greatest common factor (GCF)** is:

Units Revision

Fourth: Find the **multiples** of **6** and **8** up to **50**, then find the **common multiples** of both numbers:

The **multiples** of **6** are:

The **multiples** of **8** are:

The **common multiples** of the two numbers are:

Fifth: There is an alarm that rings every **3** hours, and another alarm that rings every **two** hours. If they ring together at **12:00**, when will they ring together again? (Show your steps.)

.....

.....

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.....

Sixth: Hana has **12** red balloons, **18** blue balloons, and **24** white balloons.

Hana wants to form **equal groups** of balloons so that all groups contain the **same** number of balloons of different colors.

How many groups can be formed?

How many balloons of each color are in each group?

.....

.....

.....

.....

.....

Accumulative Assessments on Units 1-6

Assessment 1

1 Choose the correct answer:

a 72 m and 5 dm = dm. (77 or 725 or 7,205 or 122)

b In the opposite model represents $m - 333 = 1,000$,
then $m =$ (1,333 or 667 or 333,000 or 13,330)

m	
1,000	333

c The number that comes just **after** 899,999 is
(1,000,000 or 999,999 or 999,000 or 900,000)

d A rectangle has an area of 32 cm^2 and a width of 4 cm. Its **perimeter** is
..... cm. (8 or 12 or 22 or 24)

e 4 Billiards = Ten Thousands
(400 or 4,000 or 40,000 or 400,000)

f $3,425 + 4,768 - 193 =$ (8,000 or 80 or 800 or 8)

g If a square has a side length S and a perimeter P , the equation that
represents the perimeter is
($P = S + S$ or $P = S \times S$ or $P = S + 4$ or $P = 4 \times S$)

h 2,500 centimeters = meters (25 or 250 or 25,000 or 2,500)

2 Compare using ($<$, $=$, or $>$):

a The multiple of all numbers The factor of all numbers

b 246 sec 4 min, 6 sec

c 240×100 600×400

d Double of 8 Triple of 5

3 Answer the following questions:

- a If the price of **one** pen is **3** pounds, what is the price of **70** pens?

.....

.....

- b A rectangle is **6** cm long and **4** cm wide. Write an **equation** that shows the **area** of the rectangle, then find the area.

.....

.....

- c Saleh has **15** apples, and his sister Hala has **5** apples.
How many times more apples does Saleh have than Hala?

Equation:

Answer:

- d A human needs about **4** liters of water per day.
How many **milliliters** of water does a human need per day?

.....

.....

Assessment 2

1 Choose the correct answer:

- a The value of the variable in the equation: $x - 1,250 = 3,000$
is (2,750 or 2,250 or 4,250 or 4,750)
- b A garden is in the shape of a **square** whose sides are **10** meters, then its
perimeter = meters. (20 or 40 or 50 or 100)
- c 45 is times as many as 5. (5 or 7 or 8 or 9)
- d The **GCF** of **12** and **18** is (3 or 6 or 36 or 72)

- e The value of the digit **3** in the Hundred Millions place is
 (3 00 or 3,000 or 300,000 or 300,000,000)
- f $613 - 247 =$
 (567 or 434 or 366 or 807)
- g $5 \times 50 =$ $\times 10$
 (5 or 25 or 10 or 250)
- h If a number is **3** times greater than **7**, then this number is
 (10 or 4 or 21 or 11)

2 Compare using (<, =, or >):

- a Number of factors of 4 Number of factors of 9
- b The multiple of all numbers The factor of all numbers
- c 240 6×400
- d 84 L, 48 mL 48 L, 84 mL

3 Answer the following questions:

- a A water tank contains **500** liters of water. A family used **125** liters and **500** milliliters on one day and used **250** liters and **600** milliliters the other day. How much water is left in the tank?

- b Sameh's book is **30** cm long. The cover of Sameh's book has a perimeter of **100** cm. What is Sameh's book **width**?

- c If the price of **one pen** is **7** pounds, what is the price of **50** pens?



Assessment on Unit 7

First: Choose the correct answer:

1 The rectangle area model that represents " 23×8 " is

a

	2	3
8	$8 \times 2 = 16$	$8 \times 3 = 24$

b

	20	3
80	$80 \times 20 = 1,600$	$80 \times 3 = 240$

c

	2	30
8	$8 \times 2 = 16$	$8 \times 30 = 240$

d

	20	3
8	$8 \times 20 = 160$	$8 \times 3 = 24$

2 $4 \times (200 + 30 + 5) = 4 \times$

a 235

b 10

c 523

d 940

3 $(5 \times 7) + (5 \times 30) + (40 \times 7) + (40 \times 30) =$ $\times$

a 57×43

b 45×37

c 47×35

d 43×75

4 $(8 \times 6) + (8 \times 20) + (8 \times 100) =$ $\times$

a 8×621

b 8×18

c 8×126

d $8 \times 62,000$

5 $62 \times 50 =$

a $(60 \times 50) + (2 \times 50)$

b $(6 + 2) \times 50$

c $60 + 2 + 50$

d $60 \times 2 \times 50$

6 The following rectangle area model represents

a 3×37

b 3×307

c 30×37

d 30×307

x	30	7
30	900	210

7 The quotient of $157 \div 5$ is between and

a 0 - 100

b 100 - 200

c 200 - 300

d 300 - 400

8 The number of digits of the quotient of $2,542 \div 6$ is

< a 1

b 2

c 3

d 4

9 The number that, if divided by 7, has a quotient of 24, and the remainder is 3, is

a 168

b 171

c 72

d 165

10 If the area of a rectangle is 104 cm^2 , and its width is 8 cm, then its length is cm.

a 13

b 44

c 832

d 26

Second: Complete the following:

1 $4,257 = 4,000 + 200 + \dots + \dots$

2 $80 \times 900 = \dots$

3 If $8 \times 5 = 40$, then $4,000 \div 8 = \dots$

4 $6 \times \dots = 30,000$

5 The number that if divided by 8, the quotient will be 200 is

6 The estimation of 32×24 is $\times$ =

7 The remainder when dividing $49 \div 6$ is

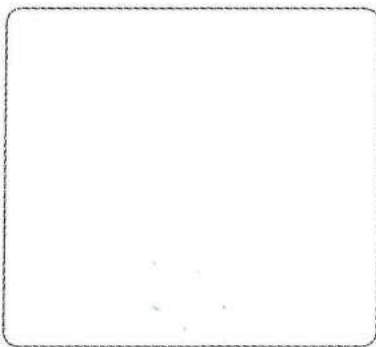
8 $75 = (12 \times \dots) + 3$

9 The quotient of $944 \div 4$ is

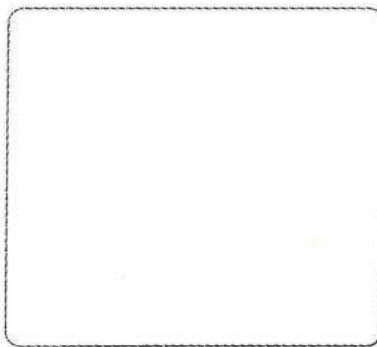
10 $800 \times 30 = 24 \times \dots$

Third: Use the rectangle area model strategy to solve the following problems:

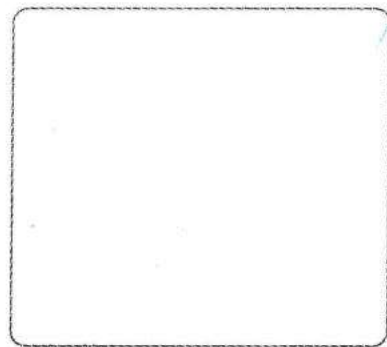
1 78×3



2 8×245

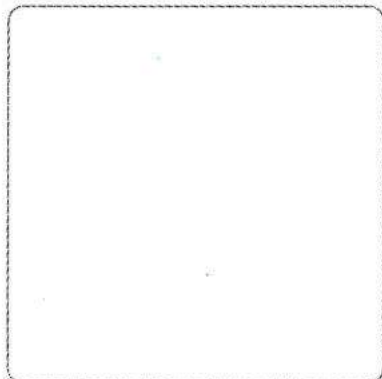


3 40×234

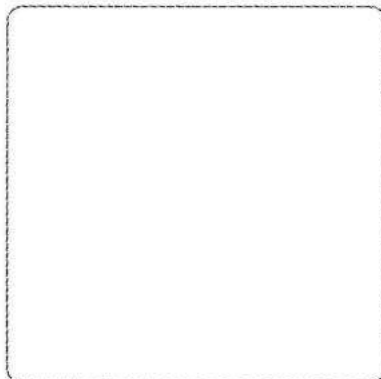


Units Revision

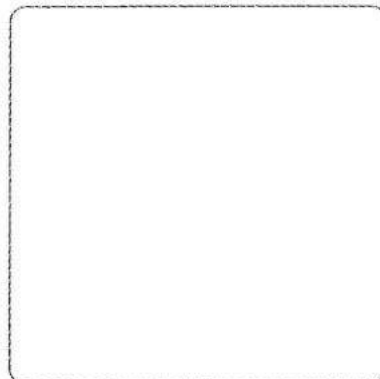
4 36×40



5 $92 \div 4$

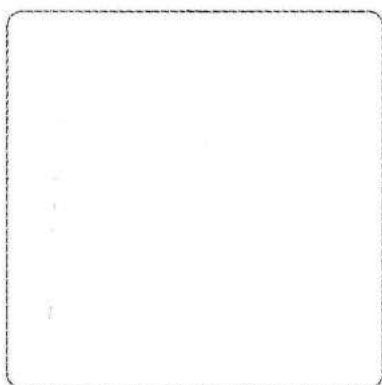


6 $849 \div 5$

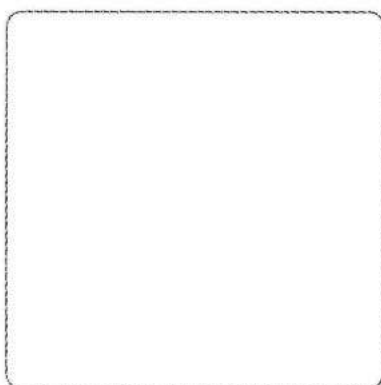


Fourth: Use the **multiplication/division partial algorithm** to solve the following problems:

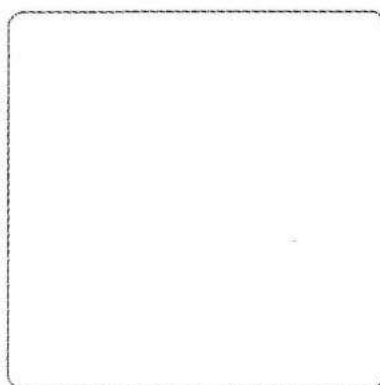
1 98×6



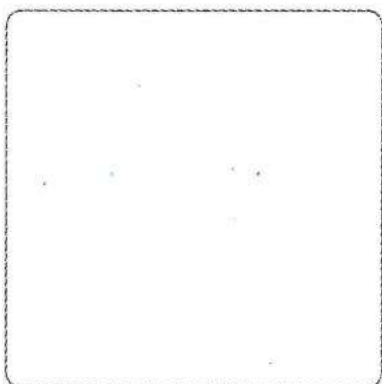
2 145×7



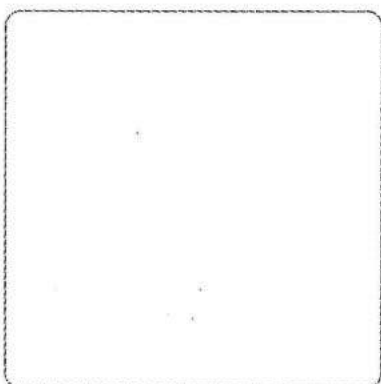
3 80×315



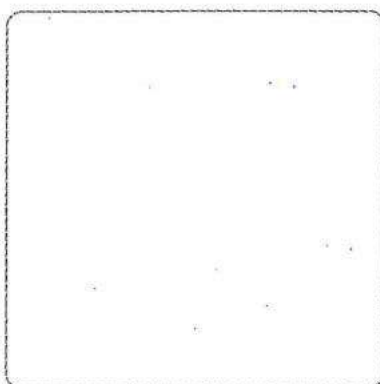
4 70×29



5 $72 \div 2$



6 $1,125 \div 5$



Fifth: Use the **standard multiplication/division algorithm** to solve the following problems:

1 6×29

2 3×125

3 96×7

4 $84 \div 6$

5 $981 \div 9$

6 $2,436 \div 4$

Sixth: Use the **Distributive Property** to solve the following problems:

1 $7 \times 45 = 7 \times (\dots + \dots) = (\dots \times \dots) + (\dots \times \dots)$
 $= \dots + \dots = \dots$

2 $5 \times 145 = 5 \times (\dots + \dots + \dots)$
 $= (\dots \times \dots) + (\dots \times \dots) + (\dots \times \dots)$
 $= \dots + \dots + \dots = \dots$

Units Revision

$$\begin{aligned} 3 \quad 8 \times 2,543 &= 8 \times (\dots\dots\dots + \dots\dots\dots + \dots\dots\dots + \dots\dots\dots) \\ &= (\dots\dots \times \dots\dots\dots) + (\dots\dots \times \dots\dots\dots) + (\dots\dots \times \dots\dots\dots) + (\dots\dots \times \dots\dots\dots) \\ &= \dots\dots\dots + \dots\dots\dots + \dots\dots\dots + \dots\dots\dots = \dots\dots\dots \end{aligned}$$

Seventh: Answer the following using the **appropriate strategy**:

- a** The school bus can accommodate **45** students. If the school has **5** buses, and each bus makes **two** trips in the morning, how many students can be transported by all **5** buses in the two trips?

.....

.....

.....

- b** Ahmed bought a car for **290,000** pounds. He paid **80,000** pounds as a down-payment, and the rest of the car's price will be paid in **7 equal** installments. How much is one installment?

.....

.....

.....

- c** April has **30** days. How many hours are there in this month?

.....

.....

.....

- d** A charity association wants to distribute **3,168** pounds among **8** people. How much is the share of one person?

.....

.....

.....

Accumulative Assessments

on Units 1-7

Assessment 1

1 Choose the correct answer:

- a The number whose factors are 1, 28, 7, 4, 14, and 2 is
(2 or 7 or 14 or 28)
- b $8 \times \dots = 40,000$ (500 or 5,000 or 50,000 or 50)
- c $1,800 \div 5 = \dots$ (1,160 or 900 or 360 or 18)
- d Four hundred forty thousand, forty-four is
(400,040,044 or 404,440 or 440,044 or 400,044)
- e $60,000 = \dots$ Thousands.
(6 or 60 or 600 or 6,000)
- f $45 + 0 = 45$
(..... Property)
(Distributive or Identity Element or Commutative or Associative)
- g The value of x in the equation $200 + x = 62,340$ is
(62,540 or 60,340 or 62,320 or 62,140)

2 Compare using (<, =, or >):

- a 23,023 mL 23 L, 230 mL
- b 20 Thousands 500×40
- c $0 \times 5 \times 400$ $5 \times 4 \times 3$
- d The number of factors of a composite number The number of factors of a prime number

3 Answer the following:

If the length of a bus is **1,280** centimeters, how long are **3** buses?

(Use the Distributive Property.)

.....

.....

Assessment 2

1 Choose the correct answer:

- a $11 + 6 = \dots + 7$ (6 or 7 or 10 or 11)
- b $171 + 387$ (To the nearest **100**) = (400 or 500 or 600 or 700)
- c 600,000 grams = kilograms (6 or 60 or 600 or 6,000)
- d $1 \times 6 = \dots$ (0 or 1 or 6 or 7)
- e The **place value** of the digit **7** in 251,4**7**5,253 is the
(Thousands or Tens or Ten Thousands or Ten Millions)
- f $25 + 75 = 75 + 25$ "..... *Property*"
(Distributive or Identity Element or Commutative or Associative)
- g The correct statement about the numbers 7 and 49 is:
(7 is a multiple of 49 or 7 is a factor of 49 or
49 is a factor of 7 or 7 equals 9 times 49)
- h The common multiples of 2 and 3 together are multiples of the
number (5 or 7 or 8 or 6)

2 Compare using ($<$, $=$, or $>$):

- a 20×50 8×125
- b $1,600 \times 10$ 16 Thousands
- c $450 \div 9$ $350 \div 5$
- d 25×0 $4 \times (2 \times 0)$

3 Answer the following questions:

- a The price of **one pen** is **90** piasters. How much are **20** pens?

- b Hisham bought **7** kg of oranges; the price of one kilogram was **525** piasters. How much did Hisham pay for the oranges?

(Use the Distributive Property.)

- c A train has **8** cars. If the number of seats in one car is **64**, how many seats does the train have?



Assessment on Unit 8

First: Choose the correct answer:

- 1 $302 \times 20 =$
a 6,400 b 600 c 6,040 d 60,400
- 2 $5 + 5 \times 5 - 5 =$
a 25 b 45 c 5 d 0
- 3 $6 \times 5 \times 3 + 2 =$
a 92 b 150 c 35 d 180
- 4 $(36 \div 4) + 3 \div 3 =$
a 10 b 46 c 4 d 12
- 5 $48 \div (18 \div 3) + 4 =$
a 12 b 63,235 c 42,307 d 50,006
- 6 = 3
a $3 + (2 \times 4)$ b $(13 - 4) \div 3$
c $7 \times (3 + 2)$ d $45 \div 2 - 2$
- 7 $(6 + 12) \div (3 - 2) =$
a 8 b 18 c 4 d 10
- 8 $(9 + 6) \times 2 \div 3 =$
a 13 b 15 c 20 d 10
- 9 $7 - 7 \times 7 \div 7 =$
a 0 b 49 c 14 d 21

Second: Find the result:

- 1 $80 \times 240 =$ 2 $92 \times 5 =$

3 $868 \div 7 = \dots\dots\dots$

4 $5,231 + 6,427 = \dots\dots\dots$

5 $78,029 - 32,171 = \dots\dots\dots$

Third: Compare using (<, =, or >):

1 100×40 50×80

2 $847 \div 7$ $655 \div 5$

3 $5 + 5 \times 8$ $5 \times 5 + 8$

4 $2,000 + 3,100$ $4,050 + 1,050$

Fourth: Match:

1 10×100

a 153

2 5

b $9,000 \div 1,000$

3 $4 \times (3 + 2) - 6$

c $(7 \times 4) - 23$

4 $306 \div 2$

d 14

5 9

e 20×50

Fifth: Complete the following:1 The remainder when dividing $97 \div 9$ is $\dots\dots\dots$.2 If $3 \times 8 + a = 30$, then $a = \dots\dots\dots$.3 The number that if divided by 7, the quotient will be 5 and the remainder is 4, is $\dots\dots\dots$.

4 There are 21 boys and 24 girls in a class, their teacher wants to divide them into 5 groups.

How many students will be in each group? $\dots\dots\dots$.

Accumulative Assessments

on Units 1-8

Assessment 1

1 Choose the correct answer:

a $12 \div 4 + 15 \div 3 =$ (6 or 8 or 9 or 11)

b If $40 \div 8 = 5$, then 5 is called a
(factor of 8 or multiple of 8 or factor of 40 or multiple of 40)

c The only even prime number is (1 or 2 or 3 or 4)

d If $9 \times n = 7 \times 9$, then $n =$ (63 or 9 or 7 or 1)

e Six hundred and fifty million, thirteen thousand, five hundred, twenty-six (In standard form) =
(605,130,516 or 605,013,516 or 650,013,526 or 6,513,516)

f $56 +$ = $54 + 100$ (102 or 98 or 154 or 200)

g $3 \times 2 + 8 \times 2 =$ (23 or 24 or 22 or 32)

h $5 \times (400 + 3 + 70) = 5 \times$ (400,370 or 437 or 473 or 374)

2 Compare using (<, =, or >):

a $400 \div 8$ $350 \div 7$ b 18×5 $6 \times 3 \times 5$

c 510 Tens 20 Hundreds d 1 hour 500 minutes

3 Answer the following questions:

a If a day is 24 hours, how many hours are in a week?

.....

b Find the GCF of 36 and 48.

.....

- c Sara bought 3 meters of cloth for 189 pounds. What is the price of one meter of this cloth?
-
-

Assessment 2

1 Choose the correct answer:

- a $(5 \times 6) + (5 \times 20) = 5 \times \dots\dots\dots$ (26 or 60 or 120 or 600)
- b The number whose **factors** are 1 and 23 is $\dots\dots\dots$.
(24 or 23 or 22 or 5)
- c 56 is 7 times more than $\dots\dots\dots$. (6 or 7 or 8 or 9)
- d $\dots\dots\dots$ Hundreds = 400×50 (20 or 200 or 2,000 or 20,000)
- e $(4 \times 1,000,000,000) + (5 \times 10,000,000) + (3 \times 1,000,000)$
 $+ (4 \times 1,000) + (5 \times 100) + (3 \times 1) = \dots\dots\dots$ (In standard form)
 (453,453 or 4,053,004,503 or 4,053,000,453 or 4,530,045,003)
- f $0 + 215 = 215$ "..... Property"
 (Identity Element or Rounding or Associative or Distributive)
- g If $40 \div 8 = 5$, then 8 is called the $\dots\dots\dots$.
 (divisor or dividend or quotient or remainder)
- h $24 \div 4 + 6 \div 3 = \dots\dots\dots$ (4 or 8 or 19 or 2)

2 Compare using (<, =, or >):

- | | | |
|-----------------------------|----------------------|------------------------------|
| a $2,500 \div 5$ | <input type="text"/> | $45,000 \div 9$ |
| b Value of x in $3x = 27$ | <input type="text"/> | Value of x in $x + 3 = 30$ |
| c $9 - (5 - 2)$ | <input type="text"/> | $9 - 5 - 2$ |
| d 13 tons, 23 kg | <input type="text"/> | 1,323 kg |

3 Answer the following questions:

- a $95 \times 4 =$
- b A candy box contains 15 pieces. How many candy pieces are there in 9 similar boxes?
- c Find the GCF of 10 and 15.
- d An apartment building has 20 floors. If each floor has 18 apartments, what is the total number of apartments in the building?



Guide Answers Exercises Book

Exercises on

Unit 1

Lessons 1&2

- 1 a Eight million, one hundred four thousand, two hundred eighty-eight.
 b Forty three million, one hundred eighty thousand, five.
 c Five hundred eighteen million, one hundred twenty-nine thousand, two hundred eight.
 d Five milliard, two million, four hundred three thousand, seven hundred fifty.
 e Seven milliard, three hundred sixty five million, four hundred twenty nine thousand, nine hundred sixty-eight.
- 2 a 345,965,728 b 5,216,190,731
 c 250,360,980 d 602,409,308
 e 62,049,038 f 9,009,002,002
 g 7,000,426,251 h 8,516,000,259
 i 1,005,006 j 30,040,080
 k 500,200,000 l 17,000,016
 m 9,000,002,000 n 10,000,010
 o 4,400,000,000
- 3 a Six million, two hundred forty eight thousand, one hundred twenty-four
 b Twenty one million, six hundred fifty thousand, two hundred thirty
 c Forty million, two hundred thousand, forty-seven
 d Six hundred fifteen million, three hundred forty thousand, two hundred one
 e Nineteen million, one hundred ninety thousand, one hundred nine
 f Six milliard, twenty five million, one hundred forty thousand, eight hundred

- g Three milliard, one hundred twenty million, five thousand, twelve
 h Nine milliard, two million, four thousand, three
 i Fifty-two million
 j One hundred twenty million
 k Twenty million, seven
 l Five hundred million, two thousand, seventy
 m Three milliard, two hundred fifty thousand
 n Three milliard, eight hundred million, fifty thousand, nine
 o Nine milliard
 p One milliard, two hundred fifty thousand, sixty

- 4 a Ones , 8
 b Hundreds , 100
 c Ten Thousands , 80,000
 d Millions , 0
 e Milliards , 7,000,000,000
 f Tens , 60
 g Thousands , 7,000
 h Hundred Thousands, 500,000
 i Hundred Millions , 400,000,000

- 5 a Tens b Ten Thousands
 c Millions d Ones
 e Hundred Thousands
 f Hundreds g Ten Millions
 h Milliards i Hundred Millions

- 6 a 528,745,432 b 789,654,026
 c 427,167,523 d 210,347,163
 e 793,400,063 f 7,463,814,325
 g 9,521,005,136 h 8,852,963,852
 i 520,753,159 j 8,201,093

- 7 a 6,000 b 30,000
 c Thousands d Ones
 e Seventy seven million, two thousands, two hundred five

Guide Answers

- f 305,014,007 g Ten Millions
h Ten Thousands i 7 j 9
- 8 a 7 b 0
c Tens d Hundred Thousands
e 4,605,090,015 f 6,000,500,030
g Ten Thousands h 2

- 9 a 300 b 500,000
c 200,000,000 d 600
e 70,000 f 20,000,000
g 90,000,000 h 100,000
i 50 j 10
k 80 l 9,000
m 1,000

- 10 a 5 b 60,000
c 6,000,000 d 100
e 300 f 9
g 10

- 11 a 800,000 b Tens
c 60,000 d 300,000,000
e 6,000,000 f 8,000
g 400,000 h 40
i 60 j 200,000,000
k 5,000 l 1,000
m 30,000,000 n 205,678
o 1,000

- 12 30 , 750 , 160 , 940 , 1,280 , 56,230

- 13 a 800 b 1,200
c 100,000 d 60,000
e 800 f 30,000

Accumulative Assessment

Up to Lesson (2)

- 1 a Thousands b 100
c Million d Ten Thousands
e 45,000 f 30,000,000
g 400,000 h 80 i 502,000
- 2 a Eighty million, three hundred four thousand, two hundred seventy-six.
b Two milliard, three hundred million, two hundred fifty thousand.

Lessons 3&4

- 1 a Seven milliard, two hundred million, one hundred fifty thousand, two hundred eight
b Four hundred million, three hundred thousand, two hundred
c One million, five hundred thousand
d Twenty million, fifty thousand, three
e Four milliard, six million, twenty thousand, three hundred twenty-six
f Two milliard, thirty million, seven hundred thousand, six hundred.
g Two hundred million, seven hundred thousand
- 2 a 500,020,050 b 4,007,005,009
c 18,090,000 d 1,000,520,040
e 8,050,060,307 f 9,000,800,300
g 9,030,060,020 h 3,000,300,000
- 3 a $400,000,000 + 100,000 + 20,000 + 600 + 3$
b $5,000,000,000 + 200,000,000 + 90,000 + 50$
c $20,000,000 + 700,000 + 50,000 + 600$
d $200,000,000 + 50,000,000 + 500 + 20 + 4$
e $6,000,000,000 + 800,000,000 + 10,000,000 + 5,000,000 + 400,000 + 30$
f $9,000,000,000 + 30,000,000 + 5,000,000 + 900,000 + 5,000 + 300 + 6$
g $100,000,000 + 90,000,000 + 600,000 + 20,000 + 4,000 + 10 + 7$
h $60,000,000 + 3,000,000 + 500 + 90 + 7$
- 4 a $(3 \times 100,000,000) + (2 \times 100,000) + (5 \times 10,000) + (1 \times 100) + (2 \times 1)$
b $(7 \times 1,000,000,000) + (5 \times 10,000,000) + (8 \times 100) + (6 \times 10) + (5 \times 1)$
c $(3 \times 1,000,000,000) + (6 \times 1,000,000) + (8 \times 10,000) + (5 \times 100)$
d 2,090,807,376 e 3,600,053,080
f 256,009,483
- 5 a 1 8,007,206,059
2 Eight milliard, seven million, two hundred six thousand, fifty-nine
3 $8,000,000,000 + 7,000,000 + 200,000 + 6,000 + 50 + 9$

Assessment on Concept 1

- 1 a 30,000 b 20,000
c 4,006,054,028 d 6,006,000
e 500,040,060 f 324,073
g 30,000,000
- 2 a Eight milliard, nine hundred thirty million, seven thousand, two hundred one.
b Hundred Millions.
c $7 \times 1,000,000,000 + 2 \times 10,000,000 + 3 \times 100,000 + 5 \times 1,000 + 4$

Lessons 5-7

- 1 a > b = c >
d = e < f <
g < h > i =
j = k <
- 2 a 5,000 , 45,000 , 550,000 , 25,030,000
b 154,200 , 205,687 , 360,548 , 545,352
c 557,589 , 557,859 , 557,895 , 557,985
d 500,000 , 500,005 , 500,500 , 505,550
- 3 a 999,999 , 909,909 , 900,990 , 900,000
b 55,512 , 55,251 , 55,152 , 55,125
c 300,020,010 , 300,002,100 , 200,300,100 , 200,030,001

Standard Form	Order
530,000,450	4
503,400,005	3
530,405,000	5
5,030,450	1
50,030,045	2

Standard Form	Order
99,990,090	5
9,000,000,090	2
999,000,000	3
9,000,090,000	1
900,900,900	4

4 $(8 \times 1,000,000,000) + (7 \times 1,000,000) + (2 \times 100,000) + (6 \times 1,000) + (5 \times 10) + (9 \times 1)$

- b 1 920,702,800
- 2 Nine hundred twenty million, seven hundred two thousands, eight hundred
- 3 $900,000,000 + 20,000,000 + 700,000 + 2,000 + 800$
- 4 $(9 \times 100,000,000) + (2 \times 10,000,000) + (7 \times 100,000) + (2 \times 1,000) + (8 \times 100)$
- c 1 39,800,202
- 2 Thirty-nine million, eight hundred thousand, two hundred two
- 3 $30,000,000 + 9,000,000 + 800,000 + 200 + 2$
- 4 $(3 \times 10,000,000) + (9 \times 1,000,000) + (8 \times 100,000) + (2 \times 100) + (2 \times 1)$
- d 1 2,890,105
- 2 Two million, eight hundred ninety thousand, one hundred five
- 3 $2,000,000 + 800,000 + 90,000 + 100 + 5$
- 4 $(2 \times 1,000,000) + (8 \times 100,000) + (9 \times 10,000) + (1 \times 100) + (5 \times 1)$

- b a Thirty-five million, two hundred thousand, eight hundred ten
b 650,013,526 c 7,400,002,030
d $100,000,000 + 50,000,000 + 200 + 30$
e 8,020,802,080 f 6,060,060,660
g 3,050,012,245 h 5,500,050,500
i 305,700,016 j 5,006,009,007
k 330 million, 330 thousand, 330

Accumulative Assessment

Up to Lesson (4)

- 1 a Three hundred fifty million, three hundred fifty
b 4,053,004,503 c 435,400,305
d 260,026,026 e 80,000,000
f Hundred million.
g 4,030,905,070 h Ten Thousands
i $(5 \times 1,000,000)$ j 700,070,000
- 2 1 3,090,200,240
2 Three milliard, ninety million, two hundred thousand, two hundred forty
3 $3,000,000,000 + 90,000,000 + 200,000 + 200 + 40$
4 $(3 \times 1,000,000,000) + (9 \times 10,000,000) + (2 \times 100,000) + (2 \times 100) + (4 \times 10)$

Guide Answers

6

Standard Form	Order
5,000,300,009	3
5,000,300,090	4
5,000,300,900	5
5,000,003,900	2
5,000,003,009	1

7

Standard Form	Order
1,000,503,205	4
1,000,030,250	5
1,050,325,000	2
1,500,030,250	1
1,032,005,000	3

8

- a < b < c >
 d 10,000,000 e 35,202,000
 f 792,689 g 280 h 75,000

Accumulative Assessment

Up to Lesson [7]

- 1 a 2,000,003,003 b Ten Thousands
 c 200,045 d 1,000,000
 e 900,206,008 f Hundred Thousands
 g Thousands h 8,008,000
 2 10,002,005 , 10,020,500 , 10,025,000 ,
 10,200,050

Lesson 8

- 1 a Midpoint: 345 , 343 $\approx$ 340
 b Midpoint: 475 , 472 $\approx$ 470
 c Midpoint: 915 , 912 $\approx$ 910
 d Midpoint: 4,295 , 4,298 $\approx$ 4,300
 2 a Midpoint: 850 , 829 $\approx$ 800
 b Midpoint: 250 , 293 $\approx$ 300
 c Midpoint: 1,250 , 1,280 $\approx$ 1,300
 d Midpoint: 6,950 , 6,988 $\approx$ 7,000
 3 a Midpoint: 5,500 , 5,425 $\approx$ 5,000

- b Midpoint: 6,500 , 6,774 $\approx$ 7,000
 c Midpoint: 18,500 , 18,524 $\approx$ 19,000
 d Midpoint: 29,500 , 29,954 $\approx$ 30,000

4 a Midpoint: 150,000

$$178,652 \approx 200,000$$

b Midpoint: 450,000

$$462,685 \approx 500,000$$

c Midpoint: 950,000

$$972,821 \approx 1,000,000$$

5 a Midpoint: 45,000,000

$$45,284,564 \approx 40,000,000$$

b Midpoint: 5,000,000

$$2,326,120 \approx 0$$

6 a Midpoint: 5,500,000,000

$$5,205,452,152 \approx 5,000,000,000$$

b Midpoint: 4,500,000,000

$$4,815,600,002 \approx 5,000,000,000$$

7 a 50

b 80

c 850

d 970

e 10

f 2,600

g 76,000

h 100,000

8 a 8,000

b 6,000

c 0

d 10,000

e 29,000

f 100,000

g 100,000

h 456,000

9 a 5,000

b 300,000

c 300,000

d 1,000,000

e 90,000

f 10

g 1,000

h 1,000,000

i 1,000

j 1,000,000

k 999 $\approx$ 1,000

l 9,266 $\approx$ 9,000

m 651 $\approx$ 700

n 14,875 $\approx$ 15,000

10 a 1,000

b 900,000

c 100,000

d 6,000,000

e 100

f 100

g 10,000

h 454

i 1,150

Accumulative Assessment

Up to Lesson [8]

1 a 8,000

b 4,950

c 100

d 10

e <

f 896,003,015

g Millions

h 451

- 2 a Three hundred thirty thousand, thirty million -
30,030,000 - 3,000,030,000
b $10,600 \approx 11,000$

Assessment on Concept 2

- 1 a 200,753 b < c <
d 471,000 e 95,500,000
f 2,040,506 g 5,000
2 a 3,999,830 , 3,999,992 , 3,001,328,391 ,
3,010,001,034
b 1 = 2 >

Exercises on Unit 2

Lesson 1

- 1 a 6 , Commutative
b 9 , Associative
c 8 , Identity Element
d 27 , Commutative
e 9 , Identity Element
f 41, 94 , Associative
g 39 , Commutative
h 0 , Identity Element
i 300, 125 , Associative
2 a $15 + 27 + 85 = 15 + 85 + 27$ "Commutative"
 $= (15 + 85) + 27$ "Associative"
 $= 100 + 27 = 127$
b $755 + 615 + 245 = 755 + 245 + 615$
"Commutative"
 $= (755 + 245) + 615$ "Associative"
 $= 1,000 + 615 = 1,615$
c $42 + 908 + 92 = 42 + (908 + 92)$ "Associative"
 $= 42 + 1,000 = 1,042$

d $244 + 0 + 256 = 0 + 244 + 256$ "Commutative"
 $= 0 + (244 + 256)$ "Associative"
 $= 0 + 500$ "Identity Element"
 $= 500$

e $244 + 0 = 0 + 244$ "Commutative & Identity Element"
 $= 244$

- 3 a Commutative b Associative
c Identity Element d Associative
e Commutative f Identity Element
g Associative h Identity Element
i Associative j Associative

Accumulative Assessment

Up to Lesson [1]

- 1 a 85 b Millions
c 30,000 d 0
e 10,000 f Associative
g 550,000,005
2 a 1 > 2 >
3 < 4 >
b 3,458,582, 3,548,258, 3,584,852, 3,854,852

Lesson 2

- 1 a 120
b $80 + 40 = 120$
c $100 - 20 = 80$
d $200 + 300 = 500$
e $400 - 300 = 100$
f $2,000 + 4,000 = 6,000$
g $78,000 - 69,000 = 9,000$
2 Answer by yourself.
3

Problem	To the Nearest 10	To the Nearest 100	To the Nearest 1,000
a 24,456 + 13,428 37,884	24,460 + 13,430 (✓) 37,890	24,500 + 13,400 37,900	24,000 + 13,000 37,000

Guide Answers

b 256,634 + 885,365 1,141,999	256,630 + 885,370 (✓) 1,142,000	256,600 + 885,400 (✓) 1,142,000	257,000 + 885,000 (✓) 1,142,000
c 2,256 + 3,815 6,071	2,260 + 3,820 (✓) 6,080	2,300 + 3,800 6,100	2,000 + 4,000 6,000
d 125,278 + 289,132 414,410	125,280 + 289,130 (✓) 414,410	125,300 + 289,100 414,400	125,000 + 289,000 414,000

- 4** **a** $9,400 + 7,200 = 16,600$ / $9,372 + 7,245 = 16,617$
b $370 + 460 = 830$ / $458 + 367 = 825$
c $900 + 900 = 1,800$ / $855 + 855 = 1,710$
d $500 + 600 = 1,100$ / $511 + 619 = 1,130$
e $700 + 600 = 1,300$ / $686 + 621 = 1,307$

Accumulative Assessment

Up to Lesson [2]

- 1** **a** 300,750 **b** 9
c 75,000 **d** 100
e 800,008,000 **f** 100
g Commutative
3 **a** 9,900,990 , 1,000,000 , 990,909 , 100,000
b $800 + 400 = 1,200$
 $773 + 375 = 1,148$

Lesson 3

- 1** **a** 36,160 **b** 542,681
c 177,761 **d** 185,952
e 218,103 **f** 99,999
g 506,000 **h** 317,142
i 1,019,522 **j** 36,323,726
2 **a** 3,352 , 3,360 (✓) , 3,300 () , 4,000 ()
b 7,541 , 7,550 (✓) , 7,600 () , 7,000 ()
c 48,687 , 48,690 (✓) , 48,700 () , 49,000 ()
d 103,216 , 103,220 (✓) , 103,200 () , 103,000 ()
3 **a** $621 - 476 = 145$ trees

- b** $1,270 - 630 = 640$ pounds
c $1,028 - 542 = 486$ boys
d $3,256 - 2,804 = 452$ pounds
e $1,200 - 235 = 965$ cm
f $4,015 - 725 = 3,290$ books
g $5,100 - 3,250 = 1,850$ pounds

Accumulative Assessment

Up to Lesson [3]

- 1** **a** Millions **b** 10,000
c 300,500,700 **d** 4,060,109
e 999,999 **f** 5,000
g Identity Element
2 **a** **1** 90,911 **2** 50,060
3 11,671 **4** 710,436
b $773 - 375 = 398$ ships

Assessment on Concept 1

- 1** **a** Commutative **b** 45
c 20 **d** 0
2 **a** 5,363 **b** 4,120
c 454 **d** 227
3 **a** $6,273 + 8,544 = 14,817$ **b** $150 + 160 = 310$

Lessons 4&5

- 1** **a** $x = 207 - 125$
 $x = 82$

207	
x	125

- b** 511 **c** 5,161 **d** 1,131
e 590 **f** 1,173 **g** 253
h 388 **i** 205 **j** 420

- 2** **a** $x = 1,200 - 700$
 $x = 500$

1,200	
700	x

- b** 8,000 **c** 9,500 **d** 68,125
e 5,950 **f** 1,148 **g** 289,000

- 3** **a** $58,620 + 58,620 = 117,240$ meters
 $193,120 - 117,240 = 75,880$ meters

- b $167,029 + 67,370 = 234,399$
 $404,901 - 234,399 = 170,502$
 c $1,525 + 19,750 + 3,705 = 24,980$ ants
 $30,520 - 24,980 = 5,540$ ants
 d $1,232 - 876 = 356$ doughnuts

Accumulative Assessment

Up to Lesson (5)

- 1 a 73 b 4,000,000
 c 9,000,020,050 d $w + 30 = 45$
 e 37 f 3,020,040
 g 5
 2 a $31 + a = 56$, $a = 56 - 31 = 25$ girls
 b $54 + b = 67$, $b = 67 - 54 = 13$ pounds

Assessment on Concept 2

- 1 a 112 b 14
 c

93
w | 42

 d $m = 25 + 31$
 2 a $57,999 + 57,024 = 115,023$
 $132,890 - 115,023 = 17,867$ ants
 b $474,401 + 108,951 = 583,352$ people
 $583,352 - 429,999 = 153,353$ people

Exercises on Unit 3

Lesson 1

- 1 a Millimeters b Centimeters
 c Meters d Kilometers
 e Millimeters f Centimeters
 g Kilometers h Meters
 i Centimeters j Meters
 k Centimeters
 2 Answer by yourself.

- 3 a 525 b 2,038
 c 3,005 d 8,550
 e 10,035 f 20,007
 g 5,74 h 70,50
 i 602,50 j 1,258
 k 20,240 l 65,5
 m 40,5 n 82,5
 o 2,2

- 4 a 745 b 902
 c 2,008 d 5,090
 e 8,750 f 80,060
 g 40,007 h 55
 i 67 j 84
 k 8,60 l 5,4
 m 50,65 n 210,50
 o 2,745 p 71,25
 q 12,500 r 72,5
 s 10,8 t 15,5

- 5 a Centimeters b 7,000
 c 8 d 50,020
 e 5,050 f 3,000
 g < h <
 i =

- 6 $8 \text{ m} = 8 \times 100 = 800 \text{ cm}$
 7 $10 \text{ km} = 10,000 \text{ m} = 1,000,000 \text{ cm}$
 8 $250 \text{ dm} = 2,500 \text{ cm} = 25,000 \text{ mm}$
 9 $250 + 250 + 250 + 250 = 1,000 \text{ m} = 1 \text{ km}$
 Number of hours ≈ 4 hours

Accumulative Assessment

Up to Lesson (1)

- 1 a meters b mass
 c 2 km d capacity
 e 54,600 f 95 m, 70 cm
 2 a 1 < 2 < 3 > 4 > 5 =
 b 1,500 cm, 25 m, 2,000 dm, 2 km
 c $2 \text{ km} = 2,000 \text{ m} = 20,000 \text{ dm} = 200,000 \text{ cm}$

Guide Answers

Lesson 2

- 1 a Grams b Grams
c Kilograms d Tons
e Grams f Tons
- 2 Answer by yourself.
- 3 a 5,200 b 8,007
c 15,015 d 20,200
e 3, 250 f 60, 24
g 200, 60 h 10, 6
- 4 a 4,000 b 20,000
c 300,000 d 680,000
e 3 f 90
g 600 h 905
i 3, 250 j 24, 120
k 30, 20 l 300, 8
m 3,245 n 15,020
o 12,150 p 20,100
- 5 a gram b ring
c 40,000 d 200,000
e 60 f 3
g 20,050 h 10,300
- 6 125,350 grams.
- 7 3 kilograms, 493 grams
- 8 $5,200 + 8,000 = 13,200$ grams

Accumulative Assessment

Up to Lesson [2]

- 1 a kilogram b desk
c 50 d 30,125
e 56 kg, 240 g
- 2 a 1 > 2 <
3 = 4 <
- b $4,300 + 3,000 + 900 = 8,200$ grams

Lesson 3

- 1 a Milliliters b Liters c Milliliters
d Liters e Liters f Milliliters
- 2 Answer by yourself.
- 3 a 3,450 b 4,070
c 20,008 d 12,500
e 8, 56 f 31, 500
g 40, 3 h 6, 70
- 4 a 3,000 b 50,000 c 16,000
d 20,000 e 7 f 80
g 15 h 200 i 8, 20
j 20, 50 k 100, 9 l 10, 16
m 3,500 n 20,040 o 12,009
- 5 a milliliter b capacity
c 20,000 d 100,000
e 5 f 300
g 45,045 h 60,006
- 6 • 50,000 • 35,130
• $50,000 - 35,130 = 14,870$ milliliters
- 7 • 4,250 • 1,050
• $4,250 + 1,050 = 5,300$ milliliters
- 8 $500,000 - (250,600 + 125,500)$
 $= 500,000 - 376,100 = 123,900$ milliliters

Accumulative Assessment

Up to Lesson [3]

- 1 a 50,000 b 14,014
c > d 20 L, 250 mL
e 205 cm f 60
g 50,020 grams
- 2 a 1 87,703 2 28,510
3 100,000 4 56,000
b 5,500,000, 5,050,000, 500,500, 500,005
c $2,000 - 660 = 1,340$ milliliters

Assessment on Concept 1

- 1 a 12,000 b kilogram c 620
d 7 e 330 f 5 L, 492 mL
- 2 a 8 m = 800 cm b 1 liter = 1,000 mL

Lessons 4&5

1, 2, 3, & 4 Answer by yourself.

- 5 a 10 b 33 c 20
d 32 e 68 f 82
g 220 h 130 i 85
j 230 k 615 l 123

- 6 a 3, 4 b 5, 1
c 6, 6 d 1, 5
e 2, 12 f 10, 10
g 1, 35 h 3, 20
i 9, 20 j 1, 5
k 3, 15 l 6, 20

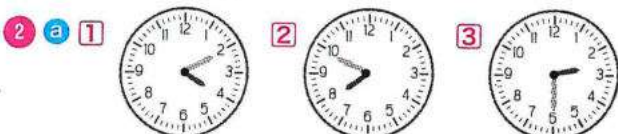
- 7 a 10:51 b 7:51
c 9:29 d 9:20
e 8:17 f 9:14
g 2:10 h 4:04
i 00:50 j 2:45
k 2:25 l 10:25
m 9:51 n 10:00
o 7:10 p 5:17
q 2:10 r 00:30

- 8 11 hours = 660 minutes
9 $120 + 15 = 135$ minutes
10 $8:35 + 1:30 = 10:05$
11 $7:42 - 6:30 = 1:12$ One hour and 12 minutes

Accumulative Assessment

Up to Lesson (5)

- 1 a Associative b >
c 50 d 20,000
e 6:00 f 610
g 5 weeks, 4 days



- b $5:35 + 1:15 = 6:50$

Lessons 6&7

- 1 $950 - (25 + 37) = 888$ g
2 $106 - 10 = 96$ cm
3 $3,000 - 2,000 = 1,000$ m = 1 km
4 $7,450 + 17,120 = 24,570$ g
5 $8,000 - 2,829 = 5,171$ mL
6 $540 - 250 = 290$ min
7 $300 + 500 = 800$ mm = 80 cm
8 $20,000 - 17,000 = 3,000$ g
9 $4,000 - (1,200 + 950) = 1,850$ mL
10 $5:10 - 3:45 = 1:25 = 85$ min
Yes, he broke the rule. $85 - 80 = 5$ min
11 $12 + 3 = 4$ m = 400 cm
12 $30 \times 5 = 150$ min
13 $5,000 \times 9 = 45,000$ m = 45 km
14 $10 \times 50 = 500$ g
15 $6 \times 5,000 = 30,000$ m = 30 km
16 $8 \times 30 = 240$ min = 4 hours
17 $10,000 \div 2,000 = 5$ days
18 $5 \times 20 = 100$ km = 100,000 m

Accumulative Assessment

Up to Lesson (7)

- 1 a < b 360
c 2,000,000 d Commutative
e 75 f 3 hr. and 15 min.
g 1:22
2 a 1 → c 2 → a
3 → d 4 → b
b 1 hr. and 90 min. , 2 hr. and 50 min. , 3 hr. 195 min.

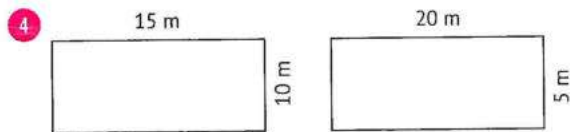
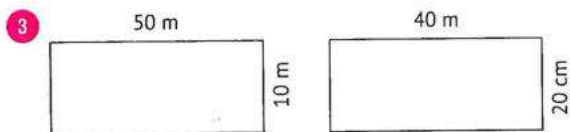
Assessment on Concept 2

- 1 a 4:10 b 3:05 c 130
d 38 e 2 hr. and 20 min.
f 9:02
2 a $3,400 + 9,700 = 13,100$ grams
b $2,040 - 980 = 1,060$ cm

Exercises on Unit 4

Lesson 1

- 1 a 22 cm b 28 cm
c 38 mm d 50 m
e 80 m f 20 cm
g 70 m h 120 mm
- 2 a 200 cm b 8 m
c 56 m d 120 cm
e 346 m



- 8 a $L + W + L + W$ b L, W c L, W
d $S, 4$ e 16 cm f 50 m
g 24 cm h 80 mm

- 9 a $P = (L + W) \times 2$
b $P = (L \times 2) + (W \times 2)$
c $P = L + W + L + W$
d 24 e 28 f 24 g 40

Accumulative Assessment

Up to Lesson (1)

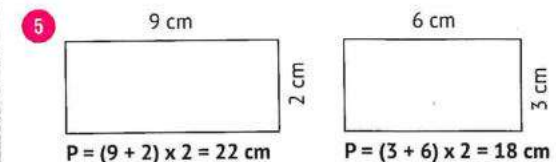
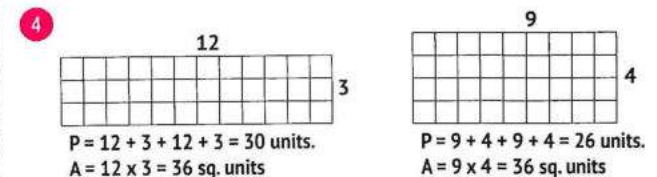
- 1 a 25 b 18 c 80 mm
d 45 e = f 23 m
- 2 a 1 701,309 2 350,062
3 576 cm 4 6:23
- b 40 m and 30 cm, 4,004 cm, 440 cm, 4 m and 30 cm.
- c $P = (2 + 5) \times 2 = 7 \times 2 = 14 \text{ m}$

Lesson 2

- 1 a 24 cm^2 b 40 cm^2 c 54 mm^2
d 120 m^2 e 400 m^2 f 25 cm^2
g 9 m^2 h 81 cm^2

2 $A = 8 \times 20 = 160 \text{ cm}^2$

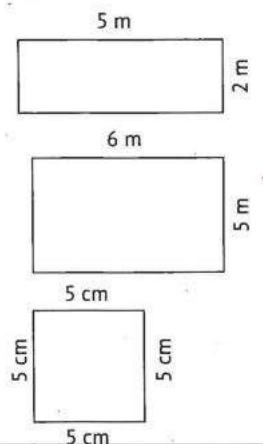
3 $P = 6 + 6 + 2 + 6 + 6 + 2 = 28 \text{ m}$
 $A = 12 \times 2 = 24 \text{ m}^2$



6 $P = (5 + 2) \times 2 = 7 \times 2 = 14 \text{ m}$
 $A = 5 \times 2 = 10 \text{ m}^2$

7 $P = (6 + 5) \times 2 = 11 \times 2 = 22 \text{ m}$

8 $P = 5 \times 4 = 20 \text{ cm}$



- 9 a $L \times W$ b $S \times S$
 c 24 , 27 d 200
 e $A = 3 \times 3 = 9 \text{ cm}^2$
 $A = 3 \times 7 = 21 \text{ cm}^2$
 $A = 9 + 21 = 30 \text{ cm}^2$

- 10 a $A = L \times W$ b $A = S \times S$
 c 49 d 32 e 24

Accumulative Assessment

Up to Lesson (2)

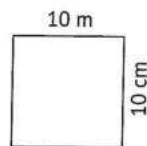
- 1 a 64 b 18 cm c >
 d 50 cm^2 e 6 f 100
 2 a 1 < 2 >
 3 > 4 <
 4 b 1 $A = 16 + 32 = 48 \text{ cm}^2$
 2 $P = (4 + 12) \times 2 = 16 \times 2 = 32 \text{ cm}$
 c $A = 80 \times 90 = 7,200 \text{ cm}^2$

Lesson 3

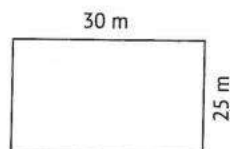
- 1 a 26 cm , 40 cm^2 b 6 m , 24 m^2
 c 8 m , 56 cm^2 d 10 mm , 150 mm^2
 e 10 mm , 200 mm^2
 f 7 cm , 26 cm g 9 cm , 32 cm
 h 4 dm , 20 dm i 5 dm , 26 dm
 2 a 16 cm , 16 cm^2 b 28 cm , 49 cm^2
 c 8 cm , 64 cm^2 d 5 m , 25 m^2
 e 6 mm , 24 mm^2 f 9 mm , 36 mm^2

- 3 $8 + 8 + 4 + 5 + 4 + 3 = 32$ meters.
 $A = 12 + 32 = 44 \text{ m}^2$

- 4 $10 \times 10 = 100$
 So, the side length = 10 cm.



- 5 $110 \div 2 = 55 \text{ m}$
 $55 - 25 = 30 \text{ m}$



- 6 $W = 1200 \div 40 = 30 \text{ cm}$

- 7 $100 \div 2 = 50 \text{ cm}$ $W = 50 - 30 = 20 \text{ cm}$

- 8 a 10 b 6 c 5
 d 6 e 9 f 20

- 9 a 8 b 9 c 48
 d 24 e 4 f 7
 g 100 h 24

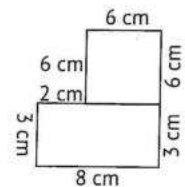
Accumulative Assessment

Up to Lesson (3)

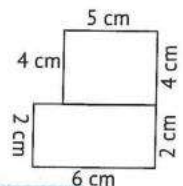
- 1 a 9 b 10,000
 c meters d 26
 e 50 m and 65 cm f 541
 2 a 1 $P = 20 \times 4 = 80 \text{ mm}$, $A = 20 \times 20 = 400 \text{ mm}^2$
 2 $P = (8 + 4) \times 2 = 12 \times 2 = 24 \text{ cm}$,
 $A = 8 \times 4 = 32 \text{ cm}^2$
 b $A = 8 \times 4 = 32 \text{ km}^2$

Lesson 4

- 1 a $P = 38 \text{ cm}$, $A = 48 \text{ cm}^2$
 b $P = 58 \text{ cm}$, $A = 150 \text{ cm}^2$
 c $P = 64 \text{ cm}$, $A = 176 \text{ cm}^2$
 d $P = 76 \text{ cm}$, $A = 192 \text{ cm}^2$
 e $P = 20 \text{ cm}$, $A = 16 \text{ cm}^2$
 2 $P = 34$ or 40 cm , $A = 60 \text{ cm}^2$



- 3 $P = 24$ or 30 cm , $A = 32 \text{ cm}^2$



Accumulative Assessment

Up to Lesson (4)

- 1 a 2,050 b 125 c 5,050
 d mass e 26
 f 5 days g 4 cm^2
 2 $P = 72 \text{ cm}$, $A = 210 \text{ cm}^2$

Assessment on Concept 1

- 1 a 20 b 14
 c 26 cm d 18 m e 28 m
 2 a < b > c <

Exercises on

Unit 5

Lessons 1-3

- 1

a $5 \times 3 = a$	b $6 \times 7 = b$
c $3 \times 8 = c$	d $d = 4 \times 9$
e $e = 2 \times 6$	f $f = 5 \times 7$
g $28 = 7 \times m$	h $35 = 5 \times h$
i $48 = 6 \times k$	j $49 = f \times 7$
k $64 = p \times 8$	l $42 = a \times 6$
- 2

a $x = 3 \times 5$	b $p = 3 \times 4$
c $a = 4 \times 6$	d $45 = 5 \times a$
e $b = 7 \times 3$	
- 3

a $35 \div 5 = 7$	b $48 \div 8 = 6$
c $45 \div 9 = 5$	d $30 \div 6 = 5$
e $14 \div 7 = 2$	f $54 \div 9 = 6$
g 48	h 18
i 24	j 10
- 4

a $x = 6 \times 3$, $x = 18$	
b $y = 7 \times 5$, $y = 35$	
c $z = 3 \times 8$, $z = 24$	
d $m = 5 \times 9$, $m = 45$	
e $45 = 9 \times a$, $a = 45 \div 9 = 5$	
f $40 = 5 \times b$, $b = 40 \div 5 = 8$	
g $12 = 3 \times m$, $m = 12 \div 3 = 4$	
h $21 = 7 \times n$, $n = 21 \div 7 = 3$	
- 5

a $24 = 3 \times a$	b $54 = 9 \times b$
c $x = 5 \times 2$	d $y = 7 \times 3$
e $18 \div 3 = 6$	f $42 \div 6 = 7$
g $28 \div 4 = 7$	h 54
- 6

a $9 = 3 \times a$, $a = 9 \div 3 = 3$ goals	
b $18 = 3 \times b$, $b = 18 \div 3 = 6$ pounds	
c $15 = a \times 5$, $a = 15 \div 5 = 3$ times	
d $36 = m \times 6$, $m = 36 \div 6 = 6$ times	
e $x = 2 \times 8$, $x = 16$ years	
f $y = 5 \times 20$, $y = 100$ km	
- 7

a $a = 3 \times 4$	b $n = 3 \times 6$
c 15	d $x = 3$
e 4	f 4 times more than 2

Accumulative Assessment

Up to Lesson (3)

- 1

a 6	b $P = 4 \times 5$
c 24	d 500,000,000
e $6 \times a = 24$	f 35
g 9	
- 2

a 30 m and 50 cm , 40 m , 3,004 dm , 30,050 cm	
b 1 $12 = 4 \times a$	2 $20 = 5 \times m$
3 $16 = 8 \times y$	4 $54 = 9 \times z$

Assessment on Concept 1

- 1

a 3	b 35	c $3 \times 6 = b$
d $x = 3 \times 9$	e 9	f 8
- 2

a $56 = 7 \times b$	
$b = 56 \div 7 = 8$ years	
b 1 $32 \div 8 = 4$	2 $9 \times 5 = 45$

Lessons 4&5

- 1

a 5	b 6	c 0
d 0	e 40	f 600
g 7,000	h 240	i 1,500
j 120,000	k 564,000	
- 2

a 3	b 7	c 6
d 12	e 9	f 4
g 0	h 0	i 8
j 100	k 9	l 40
m 17	n 1,000	o 1,000
- 3

a >	b =	c >
d =		
- 4

a 20	b 200	c 40
d 9	e 60	f 500
- 5 $2 \times 100 = 200$ mm
- 6 $200 \times 6 = 1,200$ pounds
- 7 $90 \times 20 = 1,800$ piasters
- 8 $30 \times 5 = 150$ books
- 9

$3 \times 4 = 4 \times 3$	$2 \times 6 = 6 \times 2$
---------------------------	---------------------------
- 10

$3 \times 8 = 8 \times 3$	$4 \times 6 = 6 \times 4$
---------------------------	---------------------------

Accumulative Assessment

Up to Lesson (5)

- 1 a 40 b 4
c $6 \times m = 48$ d 85
e 300,000 f 1
- 2 a 1 6 2 6
3 4,000 4 30,000
b $10 \times 2 = 20 \text{ m.}$

Lessons 6&7

- 1 a $(6 \times 2) \times 10 = 12 \times 10 = 120$
b $(5 \times 4) \times 6 = 20 \times 6 = 120$
c $(8 \times 5) \times 5 = 40 \times 5 = 200$
d $(10 \times 6) \times 8 = 60 \times 8 = 480$
e $8 \times (6 \times 5) = 8 \times 30 = 240$
f $10 \times (6 \times 9) = 10 \times 54 = 540$
g $5 \times (2 \times 10) = 5 \times 20 = 100$
h $8 \times (10 \times 10) = 8 \times 100 = 800$
- 2 a 7, 2 b 9, 7
c 2, 8 d 7, 10
e 20, 12 f 2, 8
g 22, 35 h 18, 25
- 3 a 100 b 400 c 50
d 100 e 5 f 4,000
g 50 h 2 i 600
j 20,000 k 40,000 l 50,000
- 4 a $6 \times (2 \times 10) = (6 \times 2) \times 10 = 12 \times 10 = 120$
b $9 \times (2 \times 100) = (9 \times 2) \times 100 = 18 \times 100 = 1,800$
c $7 \times (3 \times 1,000) = (7 \times 3) \times 1,000$
 $= 21 \times 1,000 = 21,000$
d $2 \times 80 = 2 \times (8 \times 10) = (2 \times 8) \times 10 = 16 \times 10$
 $= 160$
e $3 \times 50 = 3 \times (5 \times 10) = (3 \times 5) \times 10 = 15 \times 10$
 $= 150$
f $9 \times 500 = 9 \times (5 \times 100) = (9 \times 5) \times 100$
 $= 45 \times 100 = 4,500$

- g $8 \times 2,000 = 8 \times (2 \times 1,000) = (8 \times 2) \times 1,000$
 $= 16 \times 1,000 = 16,000$
h $3 \times 70 = 3 \times (7 \times 10) = (3 \times 7) \times 10 = 21 \times 10$
 $= 210$
i $9 \times 80 = 9 \times (8 \times 10) = (9 \times 8) \times 10 = 72 \times 10$
 $= 720$
j $6 \times 300 = 6 \times (3 \times 100) = (6 \times 3) \times 100$
 $= 18 \times 100 = 1,800$
k $8 \times 700 = 8 \times (7 \times 100) = (8 \times 7) \times 100$
 $= 56 \times 100 = 5,600$
l $9 \times 3,000 = 9 \times (3 \times 1,000) = (9 \times 3) \times 1,000$
 $= 27 \times 1,000 = 27,000$
m $3 \times 2,000 = 3 \times (2 \times 1,000) = (3 \times 2) \times 1,000$
 $= 6 \times 1,000 = 6,000$

- 5 a 10 b 100
c 4 d 6
e 50 f 300
g 12 h 32
i 40, 240 j 20, 120
k $120 \times 10 = 1,200$ l 2, 9, 54
m 8, 4, 320 n 20, 30, 600
- 6 a 7 b 16
c 25 d 100
e 900 f 16
g 100 h 5
- 7 a > b = c >
d = e < f <
g < h < i =
j = k < l >
- 8 a $\rightarrow 2$ b $\rightarrow 5$ c $\rightarrow 1$
d $\rightarrow 3$ e $\rightarrow 4$
- 9 $3 \times 4 \times 3 = (3 \times 4) \times 3 = 12 \times 3 = 36 \text{ pens}$
10 $4 \times 4 \times 2 = 4 \times (4 \times 2) = 4 \times 8 = 32 \text{ books}$
11 $5 \times 4 \times 3 = (5 \times 4) \times 3 = 20 \times 3 = 60 \text{ bottles}$
12 $10 \times 5 \times 8 = 10 \times (5 \times 8) = 10 \times 40 = 400 \text{ books}$

Accumulative Assessment

Up to Lesson (7)

- 1 a 100 b 1,000 c 10
d 5 e 10 f 200
g 3
- 2 a 405,000,002 , 405,200,000 , 450,000,002 , 450,200,000
b 1 $(3 \times 3) \times 3 = 9 \times 3 = 27$
2 $(4 \times 4) \times 3 = 16 \times 3 = 48$

Assessment on Concept 2

- 1 a $(2 \times 3) \times 5 = 2 \times (3 \times 5)$
b 7 c 1 d 9
e 20 f 100
- 2 a c = 1,000 b 640 c 9

Exercises on Unit 6

Lessons 132

- 1 a 1, 2, 5, 10
b 1, 2, 3, 4, 6, 12
c 1, 3, 5, 15
d 1, 2, 3, 6, 9, 18
e 1, 2, 4, 5, 10, 20
f 1, 2, 3, 4, 6, 8, 12, 24
g 1, 2, 3, 4, 6, 9, 12, 18, 36
h 1, 2, 4, 5, 8, 10, 20, 40
i 1, 17 j 1, 3, 5, 9, 15, 45
- 2 a 1, 13
b 1, 2, 3, 4, 5, 6, 10, 12, 15, 20, 30, 60
c 1, 2, 4, 7, 14, 28
d 1, 2, 7, 14
e 1, 2, 5, 10, 25, 50
f 1, 2, 4, 8, 16, 32

3 Answer by yourself.

4

Number	Factors	Number of Factors	Prime Number or Composite
6	1, 2, 3, 6	4	Composite Number
19	1, 19	2	Prime Number
22	1, 2, 11, 22	4	Composite Number
31	1, 31	2	Prime Number
14	1, 2, 7, 14	4	Composite Number
30	1, 2, 3, 5, 6, 10, 15, 30	8	Composite Number
25	1, 5, 25	3	Composite Number
23	1, 23	2	Prime Number
11	1, 11	2	Prime Number

5

Number	Factors of the Number				
	2	3	6	9	5
8	✓	X	X	X	X
9	X	✓	X	✓	X
25	X	X	X	X	✓
12	✓	✓	✓	X	X
15	X	✓	X	X	✓
10	✓	X	X	X	✓
18	✓	✓	✓	✓	X
27	X	✓	X	✓	X
28	✓	X	X	X	X
32	✓	X	X	X	X
30	✓	✓	✓	X	✓
36	✓	✓	✓	✓	X
45	X	✓	X	✓	✓
60	✓	✓	✓	X	✓
90	✓	✓	✓	✓	✓

- 6 a 37 b 24 c 21
d 31 e 59 f odd, 2
g 2 h 3 i 2
j 41, 43, 47 k prime number l 2
m one factor n more than two factors
- 7 a 17 b 1 c 2
d 3 e 2 f two factors
g prime h one factor only
i more than two factors
j two factors only k 4 l 5
m 20 n odd

Accumulative Assessment

Up to Lesson [2]

- 1 a 6,217 b 4,619
c 40,000 d 32, 3,200
- 2 a 2 b Associative
c 15 d more than two factors
e 3 f 1,000
g 67 h 3
- 3 a 1, 2, 4, 5, 8, 10, 20, 40
b 1, 2, 4, 7, 14, 28

Lesson 3

- 1 a GCF = 5 b GCF = 6
c GCF = 2 d GCF = 4
e GCF = 7 f GCF = 12
g GCF = 16 h GCF = 12
- 2 • Largest number of groups (GCF) = 7
Number of girls in each group = $28 \div 7 = 4$ girls.
Number of boys in each group = $21 \div 7 = 3$ boys.
- 3 • Largest number of snacks (GCF) = 8
Number of croissants = $24 \div 8 = 3$ croissants.
Number of sweets = $16 \div 8 = 2$ sweets.
- 4 • Largest number of flower arrangements (GCF) = 7
Number of red flowers = $21 \div 7 = 3$ flowers.
Number of blue flowers = $14 \div 7 = 2$ flowers.

Accumulative Assessment

Up to Lesson [3]

- 1 a 3 b 45,000
c 24×100 d 7
e 4 f 100
g 20 h 5
- 2 a GCF = 15
b $5 \times 20 = 100$ minutes.

Assessment on Concept 1

- 1 a 3 b 14 c 7
d 3 e prime f 1
- 2 a 1 → b 2 → c 3 → a
b Number of groups (GCF) = 5 groups
Ducks = $15 \div 5 = 3$ ducks
Chickens = $25 \div 5 = 5$ chickens

Lessons 4-6

- 1 & 2 Answer by yourself.
- 3 0, 6, 12, 18 4 0, 20, 40
5 0, 42, 84 6 0, 12, 24, 36, 48
7 0, 10, 20, 30, 40
8 0, 24, 48
- 9 a 0, 8, 16, 24, 32
b 0, 9, 18, 27, 36
c 0, 7, 14, 21, 28
d 6, 12 e 36, 72 f 40, 80
g 42, 6, 7, 6, 7, 42 h 5×9 , 45, 5, 9, 45
i 24, 24, 8, 3, 24 j 24 k 30
l 45 m 21
n 8 is a multiple of 4 and 2
or 2 and 4 are factors of 8
o 10 is a multiple of 2 and 5
or 2 and 5 are factors of 10
p 60, 72, 84
- 10 a 2 b 16 c 12
d 24 e multiple f 21
g 24 h 20 i 15
j 0

Accumulative Assessment

Up to Lesson [6]

- 1 a 4 b millimeter
c 400 d 3
e 46,000 f 5 g 24
- 2 a Common multiples: 0, 12, 24
b $10:00 - 8:45 = 1:15$

Guide Answers

Assessment on Concept 2

- 1 a 0 b 17 c 3
 d 12 e 8 f 36
 g 8 and 6
- 3 a 1 → b 2 → c 3 → a
 b 1 0, 4, 8, 12, 16, ...
 2 0, 6, 12, 18, 24, 30, ...
 3 Common multiples: 0, 12, 24, ...

Exercises on

Unit 7

Lesson 1

- 1 a 105 b 70 c 126
 d 130 e 78 f 172
 g 162
- 2 a 492 b 228 c 504
 d 644 e 152 f 135
 g 171 h 891 i 180
 j 276
- 3 110
 4 522 5 510

Accumulative Assessment

Up to Lesson [1]

- 1 a 3 b 10 c 48
 d 6 e 5,000 f 21,000
- 2 a 1 $26 \times 5 = 100 + 30 = 130$
 2 $69 \times 3 = 180 + 27 = 207$
 b 1 623 2 448

Lesson 2

- 1 a 8, 9 b 3, 4 c 3, 6, 5
 d $(6 \times 3) + (6 \times 4) + (6 \times 5)$
 e $(6 \times 200) + (6 \times 90) + (6 \times 3)$

$$f (8 + 9 + 3) = (6 \times 8) + (6 \times 9) + (6 \times 3)$$

$$g 2 \times (700 + 30 + 9)$$

- 2 a 124 b 414 c 2,910
 d 2,208 e 2,492 f 7,692
 g 29,358 h 27,244 i 18,360
 j 24,015
- 3 a 1,000 b 3,072 c 5,661
 d 4,942 e 11,825 f 7,698
 g 16,398 h 14,035
- 4 $1280 \times 3 = 3,840$ 5 $525 \times 7 = 3,675$
 6 $930 \times 5 = 4,650$ 7 $185 \times 8 = 1,480$

Accumulative Assessment

Up to Lesson [2]

- 1 a $n = 3 \times 8$ b 36
 c Commutative d 36 e 500
 f 45,000 g 9 : 40
- 2 a 1 864 2 1960 b 45,512

Lessons 3&4

- 1 a 4 b 564 c 9,532
 d 6,483 e 9,050 f 6,600
 g 4003 h $700 + 80 + 5$
 i $900 + 20 + 7$ j $7,000 + 800 + 50 + 9$
 k $8,000 + 300 + 20 + 4$
 l $6,000 + 200 + 1$ m $300 + 9$ n $9,000 + 6$
 o $8,000 + 200$ p $3,000 + 10$
- 2 a 1,356 b 2,900 c 1,308
 d 7,488 e 3,762 f 55,368
 g 8,724 h 36,168
- 3 a 280 b 345 c 159
 d 1,664 e 5,010 f 1,195
 g 10,472 h 13,188 i 40,984
 j 1,218 k 3,621 l 12,032
- 4 a 135, 150 b 702, 800
 c 2,136, 3,600 d 27,248, 34,000
 e 40,070, 40,000
- 5 a > b = c <
 d = e > f <
 g < h < i =

- 6 $335 \times 6 = 2,010$ pounds
 7 $6,250 \times 8 = 50,000$ pounds
 8 $24 \times 7 = 168$ hours

Accumulative Assessment

Up to Lesson (4)

- 1 a 473 b 4 c 5,023
 d 16 e 6 f 40
 g 17
 2 a 1 > 2 = 3 = 4 < 5 <
 b 235×6 , 325×4 , 625×2 , 236×5
 c $64 \times 8 = 512$ seats

Lesson 5

- 1 a 1,640 b 750 c 2,280
 d 3,420 e 5,760 f 1,480
 2 a 7,470 b 2,100 c 960
 d 680 e 5,160 f 3,400
 3 a 1,350 b 1,710 c 2,320
 d 3,780 e 2,970 f 4,400
 4 a 1,360 b 6,000 c 8,640
 d 2520 e 1,050 f 1,000
 5 a 720 b 1,120 c 1,750
 d 3,780 e 4,400 f 2,880
 g 5,700 h 3,600
 6 $95 \times 20 = 1,900$ piasters
 7 $20 \times 35 = 700$ kilograms
 8 $65 \times 20 = 1,300$ pounds

Accumulative Assessment

Up to Lesson (5)

- 1 a 81 b 70 c 120
 d Distributive e 86,000 f 59
 g 14 h 5,000
 2 a 1 61,100 2 55,513 3 3,128
 4 1,350
 b $20 \times 18 = 360$ apartments

Assessment on Concept 1

- 1 a 4 b 7 c 290
 d 1,074 e 180 f 3,600
 2 a 1 $\rightarrow$ b 2 $\rightarrow$ c 3 $\rightarrow$ a
 b $A = 60 \times 274 = 16,440 \text{ m}^2$

Lessons 6&7

- 1 a 8, 4, 2, 0 b 9, 2, 4, 1
 c 15, 5, 3, 0 d 28, 4, 7, 0
 e 36, 6, 6, 0 f 35, 8, 4, 3
 g 25, 4, 6, 1 h 31, 5, 6, 1
 i 42, 8, 5, 2 j 48, 6, 8, 0
 2 a 30 b 8,000 c 300
 d 3,000 e 90 f 80,000
 g 360 h 90,000 i 400
 j 700,000
 3

	Equation	Related Fact	Quotient
a	$400 \div 4$	$4 \div 4 = 1$	100
b	$8,000 \div 2$	$8 \div 2 = 4$	4,000
c	$90,000 \div 3$	$9 \div 3 = 3$	30,000
d	$420 \div 7$	$42 \div 7 = 6$	60
e	$350 \div 5$	$35 \div 5 = 7$	70
f	$3,600 \div 4$	$36 \div 4 = 9$	900
g	$27,000 \div 9$	$27 \div 9 = 3$	3,000
h	$240,000 \div 8$	$24 \div 8 = 3$	30,000
i	$60,000 \div 3$	$6 \div 3 = 2$	20,000
j	$18,000 \div 6$	$18 \div 6 = 3$	3,000

- 4 a > b > c >
 d = e > f >
 g > h < i < j <
 5 a 800 b 7,000 c 40
 d 20,000 e 5,000
 6 $15 \div 4 = 3 \text{ R } 3$
 7 $21 \div 5 = 4 \text{ R } 1$
 8 a $32 \div 9 = 3 \text{ R } 5$ b $32 \div 3 = 10 \text{ R } 2$
 c $32 \div 4 = 8 \text{ R } 0$ d $32 \div 7 = 4 \text{ R } 4$
 9 $52 \div 6 = 8 \text{ R } 4$, 9 boxes are needed.
 10 $12,000 \div 3 = 4,000$ pounds
 11 $24,000 \div 6 = 4,000$ pounds

Guide Answers

Accumulative Assessment

Up to Lesson (7)

- 1 a 300 b < c 8
d 8,045 e 50 f 9
g 24 h 2 i 4,000
2 a 1 9 R1 2 8 R3 3 8 R3
b $240 \div 8 = 30$ students

Lesson 8

- 1 a 14 b 16 c 49
d 18 R 2 e 12 R 4 f 13 R 3
g 146 R 3 h 146 i 123
j 800 k 90
2 a 14 R 5 b 109 c 23
d 123

Accumulative Assessment

Up to Lesson (8)

- 1 a 0 b 3 c 4,015
d 20 e 12 f 9
g 30
2 a 1 19 2 24
b $85 \div 5 = 17$ candy bars

Lesson 9

- 1 a 13 b 18 c 11 R 4
d 156 e 144 R 1 f 275
g 1,614 h 717 i 1,358 R 2
j 507 k 701 R 3 l 1,201
2 a $92 \div 4$ b $53 \div 3$ c $858 \div 6$
d $688 \div 5$ e $2,802 \div 6$
3 $96 \div 8 = 12$ m
4 $1,548 \div 6 = 258$
5 $175 \div 5 = 35$ tourists

Accumulative Assessment

Up to Lesson (9)

- 1 a > b 9 c millimeters
d 1,000 e 20 f 3
g 6 h 26
2 a 1 18 2 49 3 590 R 2
b $72 \div 6 = 12$ students

Lessons 10 & 11

- 1 a 60 and 80 , 30 and 40
b 60 and 90 , 20 and 30
c 120 and 160 , 30 and 40
d 100 and 150 , 20 and 30
e 300 and 600 , 100 and 200
f 700 and 1,400 , 100 and 200
g 2400 and 3,000 , 400 and 500
h 3200 and 4,000 , 400 and 500
i 5,000 and 10,000 , 1,000 and 2,000
j 6,000 and 9,000 , 2,000 and 3,000
2 a 13 b 16 c 23 R 2 d 34
e 75 f 49 R 3 g 138 h 248
i 136 R 2 j 157 k 248 R 4 l 805
m 4,878 n 709 o 3,008
3 a 17 , 10 and 20 , 2 , draft
b 27 , 20 and 30 , 2 , draft
c 124 , 100 and 200 , 3 , draft
d 714 , 700 and 800 , 3 , draft
e $3,275$ R 2 , 3,000 and 4,000 , 4 , draft
4 $784 \div 7 = 112$ passengers
5 $567 \div 3 = 189$ books
6 $144 + 216 = 360$, $360 \div 8 = 45$ students

Accumulative Assessment

Up to Lesson (11)

- 1 a > b 5 c 20 d 27 e 65
f 3 g 24

2 a 23 b 68 c 1,213

3 $215 \div 5 = 43$ rooms

Assessment on Concept 2

1 a 2 b 278 c 39
d 5 e 420 f 900
2 a $\rightarrow 2$ b $\rightarrow 3$ c $\rightarrow 1$

3 $7,000 \div 50 = 140$ boxes.

Exercises on Unit 8

Lessons 1&2

1 a 27 b 36 c 0
d 5 e 5 f 10
g 10 h 22 i 10
j 23 k 90 l 240
m 3 n 1 o 10
p 4 q 2 r 30
s 48 t 40
2 a 47 b 50 c 27
d 23 e 25 f 12
g 3 h 4 i 11
j 12 k 11 l 30
m 1 n 1 o 7
p 13
3 a 23 b 8 c 180
d 2

4 a 51 b 28 c 11
d 39 e 8 f 6
g 1 h 3
5 a 86 b 9 c 16
d 21 e 10 f 52
g 18 h 3
6 a 2 b 80 c 10
d 121 e 2 f 20

7 a $194 - 50 = 144$ persons, $144 \div 9 = 16$ minibuses
b $18 \times 6 = 108$ balloons, $108 \div 9 = 12$ balloons
c $8 \times 6 = 48$ eggs, $48 - 38 = 10$ eggs
d $12 + 28 + 40 = 80$ m, $80 \div 4 = 20$ m
e $42 \div 3 = 14$, $14 - 4 = 10$ biscuits

f **Model (A):** $15 \times 48 = 720$ nails
 $15 \times 24 = 360$ metal rings
 $15 \times 21 = 315$ pieces of wood

Model (B): $7 \times 52 = 364$ nails
 $7 \times 32 = 224$ metal rings
 $7 \times 26 = 182$ pieces of wood

Total: $720 + 364 = 1,084$ nails
 $360 + 224 = 584$ metal rings
 $315 + 182 = 497$ pieces of wood

Assessment on Concept 1

1 a 16 b 32 c 64
d 500 e Associative
2 a 7 b 12 c 11
d 1 e 123

3 $(4 \times 6) + (3 \times 5) = 24 + 15 = 39$ pens



Guide Answers Assessments on Units

Assessment on

Unit 1

First

- 1 (c) 2 (c) 3 (a) 4 (a) 5 (c)
6 (d) 7 (c) 8 (b) 9 (b) 10 (b)

Second

- 1 Hundred Millions 2 20
3 Two milliard, seven million, two hundred twenty five thousand, one hundred two
4 Ten Millions 5 500,000
6 3,000
7 $1,000,000 - 100,000 - 1,000 - 10 - 1$
8 9,705,030,006 9 650,000 10 44,500

Third

- 1 < 2 < 3 > 4 < 5 =

Fourth

Standard Form	Order
30,000,450	2
3,000,405	1
300,000,450	4
3,000,000,450	5
30,450,000	3

Fifth

- a 5,599, 5,600
b 4,985, 5,000
c 90,432, 90,400
d 83, 100

Assessment on

Unit 2

First

- 1 (c) 2 (b) 3 (a) 4 (c) 5 (a)
6 (b) 7 (a) 8 (b) 9 (b) 10 (c)

Second

- 1 21, Commutative
2 13, 45, 25, Associative
3 0, Additive Identity Element
4 110,710 5 235,553 6 242
7 142 8 738 9 242
10 $5,831 \approx 6,000$

Third

- a $x = 6,245 + 5,375$ $x = 11,620$
b $x = 1,025 - 675$ $x = 350$
c $345 + 290 = 635$ m
 $915 - 635 = 280$ m

Accumulative Assessment 1 on Units 1&2

- 1 a 7, 0, 21 b 243
c 9, Identity Element
d 500,000
2 a 4,000 b Identity Element
c 5,023 d Thousands
3 a < b >
c < d =
4 a Total = $458 + 367 = 825$ students

b She counted = $1,525 + 19,750 + 3,705$
 $= 24,980$ ants

Number of ants she needs to count
 $= 30,520 - 24,980 = 5,540$ ants

c 1 470,595 2 29,112

Accumulative Assessment 2 on Units 1&2

1 a 1,000

b 27, Commutative

c 755

d 6,815,400,030

2 a 800,008,000

4,000	
3.600	P

c 50,000

d 48

3 a =

b >

c <

d =

4 a $6,000,000 + 200,000 + 50,000 + 4,000 + 800 + 30 + 5$

b $6,250 - 4,630 = 1,620$

c Order: 345,456, 345,465, 354,456, 354,465

Assessment on

Unit 3

First

1 (a)

2 (d)

3 (a)

4 (d)

5 (c)

6 (c)

7 (c)

8 (d)

9 (b)

10 (a)

Second

1 1,025

2 20, 15

3 15, 40

4 400, 20

5 4,000

6 20

7 500,000

8 9:13

9 00:23

10 4, 10

Third

1 >

2 >

3 <

4 =

Fourth

4 dm, 400 cm, 40 m, 4 km

Fifth

Per day: $150 \div 3 = 50$ minutes

Per week: $50 \times 9 = 450$ minutes

Accumulative Assessment 1 on Units 1-3

1 a 1,200

b 5,065

c 10,000

d $635 + 492 = 492 + 635$

e 0

f 18

g mass

2 a <

b <

c >

d =

3 a $2,000,000 + 200,000 + 30,000 + 5,000 + 600 + 20 + 4$

b $2000 \text{ m} = 20,000 \text{ dm} = 200,000 \text{ cm}$

Guide Answers

c $5:35 + 1:15 = 6:50$

d $3:45 + 2:15 = 5:60 = 6:00$

Accumulative Assessment 2 on Units 1-3

1 a 50 b 15,5 c 901 d 0

e 8000

f 765,430

g 100 million

h ring

2 a < b = c = d <

3 a → 3 b → 1

c → 4 d → 2

4 a $50\text{L} = 50,000\text{ mL}$

$35\text{L} + 130\text{ mL} = 35,130\text{ mL}$

We need $= 50,000 - 35,130$

$= 14,870\text{ mL}$

b $65,250\text{ g}$

Assessment on

Unit 4

First

1 (a) 2 (b) 3 (c) 4 (a) 5 (d)

6 (c) 7 (a) 8 (a) 9 (a) 10 (c)

Second

1 50 m 2 24 cm 3 49 4 32 5 14

6 34 7 9 8 6 9 16 10 32

Third

1 a $A = 24\text{ cm}^2$, $P = 20\text{ cm}$

b $A = 16\text{ cm}^2$, $P = 16\text{ cm}$

c $A = 22\text{ cm}^2$, $P = 26\text{ cm}$

2 $P = (40 + 15) \times 2 = 110\text{ cm}$

Accumulative Assessment 1 on Units 1-4

1 a 24 b 22 c 326

d 10,000 e 24 f 4,015

g 0 h 12,015,020

2 a = b = c > d =

3 a $30 \times 4 = 120\text{ cm}$

b $10,000 - (5,250 + 2,750) = 2,000\text{ LE}$

c Perimeter $= (10 + 5) \times 2 = 30\text{ cm}$

Area $= 10 \times 5 = 50\text{ cm}^2$

Accumulative Assessment 2 on Units 1-4

1 a 55 b 75,000

c $80 + 40 = 120$ d 45,000

e 100,000 f millimeters g 64

2 a < b = c < d =

3 a Area $= 8 \times 8 = 64\text{ cm}^2$

b $2,835\text{ cm} + 375\text{ cm} = 3,210\text{ cm}$

Assessment on

Unit 5

First

- 1 (c) 2 (d) 3 (a) 4 (b) 5 (a)
6 (a) 7 (c) 8 (b) 9 (a) 10 (b)

Second

- 1 20 2 $9 + 9 + 9$ 3 $36 = 4n$
4 7 5 20 6 40,000
7 50 8 $40 \times 6 = 240$ 9 10, 180
10 400, 3,600

Third

- 1 $m = 8 \times 6$ 2 $24 = 8n$
 $m = 48$ $n = 24 \div 8 = 3$
3 $21 = a \times 3$ 4 $x = 6 \times 7$
 $a = 21 \div 3 = 7$ $x = 42$

Fourth

- a $20 = 5x$ b $3 \times 4 = 4 \times 3$
 $x = 20 \div 5$ $2 \times 6 = 6 \times 2$
 $= 4$ crayons.
c $3 \times 5 \times 2 = 3 \times (5 \times 2) = 3 \times 10 = 30$

Accumulative Assessment

on Units 1-5

- 1 a 540 b Commutative
c 902 d 8,999,999
e Ten Thousands f 123,563 g 5 h 3
2 a = b > c > d <
3 a $P = (5 + 2) \times 2 = 14$ m
b 37,035 g

Accumulative Assessment

on Units 1-5

- 1 a 0 b 108 mm
c 16 d $x = 5 \times 3$
e 4,605,090,015 f perimeter
g 8×4 h 7
2 a < b < c > d <
3 a Ola's age = $5 \times 3 = 15$ years
b Area = $8,000 \times 4,000 = 32,000,000 \text{ m}^2$
c We need = $100,000 - 35,750 = 64,250 \text{ mL}$

Guide Answers

Assessment on

Unit 6

First

- 1 (c) 2 (b) 3 (c) 4 (d) 5 (b)
6 (c) 7 (a) 8 (c) 9 (c) 10 (d)

Second

- 1 1, 2, 14 2 3
3 23, 29, 31, 37 4 prime 5 11
6 0, 2, 4, 6 or 8 7 0, 6, 12, 18
8 24, 36, 48 9 multiple 10 7

Third

GCF = 8

Fourth

The common multiples are: 0, 24, 48

Fifth

They will ring together at 6 o'clock.

Sixth

The GCF of (12, 18, 24) is 6.

Red balloons = $12 \div 6 = 2$ balloons

Blue balloons = $18 \div 6 = 3$ balloons

White balloons = $24 \div 6 = 4$ balloons

Accumulative Assessment 1

on Units 1-6

- 1 a 725 b 1,333
c 900,000 d 24
e 400,000 f 8,000

g $P = 4 \times S$ h 25

2 a < b = c < d >

3 a The price of 70 pens: $3 \times 70 = 210$ pounds.

b $A = 6 \times 4 = 24 \text{ cm}^2$

c $15 = 5 \times m$ $m = 15 \div 5 = 3$ times

d A person needs: $4 \times 1,000 = 4,000 \text{ mL}$.

Accumulative Assessment 2

on Units 1-6

- 1 a 4,250 b 40 c 9 d 6
e 300,000,000 f 366 g 25 h 21

2 a = b < c < d >

3 a Used water = $125,500 + 250,600 = 376,100 \text{ mL}$

Water left = $500,000 - 376,100 = 123,900 \text{ mL}$

b Width: $100 \div 2 - 30 = 20 \text{ cm}$

c The price of 7 pens: $7 \times 50 = 350$ pounds.

Assessment on

Unit 7

First

- 1 (d) 2 (a) 3 (b) 4 (c) 5 (a)
6 (c) 7 (a) 8 (c) 9 (b) 10 (a)

Second

- 1 50,7 2 72,000 3 500 4 5,000
5 1,600 6 $30 \times 20 = 600$ 7 1
8 6 9 236 10 1,000

Third

- 1 234 2 1,960 3 9,360
4 1,440 5 23 6 169 R4

Fourth

- 1 588 2 1,015 3 25,200
4 2,030 5 36 6 225

Fifth

- 1 174 2 375 3 672
4 14 5 109 6 609

Sixth

- 1 315 2 725 3 20,344

Seventh

- a $45 \times 5 \times 2 = 45 \times (5 \times 2)$
 $= 45 \times 10 = 450$ students
b Remaining: $290,000 - 80,000 = 210,000$ pounds
One installment: $210,000 \div 7 = 30,000$ pounds

- c Hours in April: $30 \times 24 = 720$ hours
d Share of each person: $3,168 \div 8 = 396$ pounds

Accumulative Assessment 1

on Units 1-7

- 1 a 28 b 5,000
c 360 d 440,044
e 60 f Identity Element
g 62,140
2 a < b = c < d >
3 Length of 3 buses: $3 \times 1,280$
 $= 3 \times (1,000 + 200 + 80)$
 $= (3 \times 1,000) + (3 \times 200) + (3 \times 80)$
 $= 3,000 + 600 + 240 = 3,840$ cm

Accumulative Assessment 2

on Units 1-7

- 1 a 10 b 600
c 600 kg d 6
e Ten Thousands f Commutative
g 7 is a factor of 49 h 6
2 a = b = c < d =
3 a The price of 20 pens: $90 \times 20 = 1,800$ piasters.
b Hisham paid: $7 \times 525 = 7 \times (500 + 20 + 5)$
 $= (7 \times 500) + (7 \times 20) + (7 \times 5)$
 $= 3,500 + 140 + 35$
 $= 3,675$ piasters.
c Number of train seats: $64 \times 8 = 512$ seats.

Assessment on Unit 8

First

- | | | |
|-------|-------|-------|
| 1 (c) | 2 (a) | 3 (a) |
| 4 (a) | 5 (a) | 6 (b) |
| 7 (b) | 8 (d) | 9 (a) |

Second

- | | | |
|----------|----------|-------|
| 1 19,200 | 2 460 | 3 124 |
| 4 11,658 | 5 45,858 | |

Third

- 1 = 2 < 3 > 4 =

Fourth

- | | | |
|-------|-------|-------|
| 1 → e | 2 → c | 3 → d |
| 4 → e | 5 → b | |

Fifth

- 1 7 2 6 3 39
- 4 Total number of students: $24 + 21 = 45$ students.
Students in each group: $45 \div 5 = 9$ students.

Accumulative Assessment 1 on Units 1–8

- 1 a 8 b factor of 40
c 2 d 7
e 650,013,526 f 98
g 22 h 473
- 2 a = b = c > d <
- 3 a A week: $24 \times 7 = 168$ hours.
b Factors of 36 are: 1, 2, 3, 4, 6, 9, 12, 18, 36
Factors of 48 are: 1, 2, 3, 4, 6, 8, 12, 16, 24, 48
The GCF = 12
c The price of one meter = $189 \div 3 = 63$ pounds

Accumulative Assessment 2 on Units 1–8

- 1 a 26 b 23
c 8 d 200
e 4,053,004,503 f Identity Element
g divisor h 8
- 2 a < b < c > d >
- 3 a $95 \times 4 = (4 \times 90) + (4 \times 5)$
 $360 + 20 = 380$
b Candy pieces in 9 boxes: $15 \times 9 = 135$ pieces.
c 5 d Total number: $18 \times 20 = 360$ apartments

في
اللغة
العربية
للمصف الرابع الابتدائي

أحرص
على اقتناء كتاب
الأستاذ



MATH

Final Revision & Exams



Primary
First Term

By Mohamed Nasreldin

2026

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Final Revision

Exams

Guide Answer

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Final Revision

First: Choose the correct answer:

- 1 The value of the digit 2 in 125,357 is
 (a) 20 (b) 20,000 (c) 200 (d) 2,000
- 2 3,400,003,025 =
 (a) 3 milliard + 400 million + 300 thousand + 25
 (b) 3 milliard + 4 million + 3 thousand + 25
 (c) 3 milliard + 400 million + 3 thousand + 25
 (d) 3 milliard + 400 million + 25 thousand + 3
- 3 275 Millions =
 (a) 275 (b) 275,000 (c) 275,000,000 (d) 200,070,005
- 4 The smallest 5-different-digit number is
 (a) 10,000 (b) 50,000 (c) 10,234 (d) 12,345
- 5 The greatest number that can be formed from the digits 2, 7, 1, 0, 3 is
 (a) 12,3170 (b) 70,321 (c) 73,210 (d) 10,237
- 6 $50,000 + 0 + 25 =$
 (a) 500,025 (b) 5,025 (c) 525 (d) 50,025
- 7 60 hundred Thousands =
 (a) 60,000 (b) 600,000 (c) 6,000,000 (d) 6,000
- 8 4 million = Ten Thousands.
 (a) 400 (b) 4,000 (c) 40,000 (d) 400,000

- 9 The number 35,200,810 in word form is
 (a) thirty-five thousand, two hundred eighty-one
 (b) thirty-five million, two hundred thousand, eight hundred, ten
 (c) three hundred fifty-two million, eight hundred, ten
 (d) thirty-five million, two thousand, eight hundred, ten
- 10 $(6 \times 1,000,000,000) + (6 \times 10,000,000) + (6 \times 10,000)$
 $+ (6 \times 100) + (6 \times 10) = \dots\dots\dots$
 (a) 6,060,060,660 (b) 660,060,660
 (c) 6,660,000,660 (d) 6,666
- 11 $3,000,000,000 + 50,000,000 + 12,000 + 245 = \dots\dots\dots$
 (a) 3,512,245 (b) 3,512,245 (c) 3,512,000,245 (d) 3,050,012,245
- 12 Three hundred five million, seven hundred thousand, sixteen =
 (a) 350,716,000 (b) 350,700,016
 (c) 305,700,160 (d) 305,700,016
- 13 The smallest 10-digit number is
 (a) One milliard (b) 100 million
 (c) 1000 thousand (d) one million
- 14 $906,456 \approx \dots\dots\dots$ (To the nearest 100,000)
 (a) 906,000 (b) 1,000,000 (c) 910,000 (d) 900,000
- 15 $6,587 \approx 6,600$ (To the nearest)
 (a) 10 (b) 100 (c) 10,000 (d) 1,000
- 16 The digit in the Hundred Thousands place in 3,910,472 is
 (a) 1 (b) 2 (c) 4 (d) 9

17 Which digit can be placed in the bubble to make the mathematical expression correct? $6,201,351 > 6,20 \bigcirc ,351$

- a 0 b 1 c 2 d 3

18 Which number could be rounded to 6,200 when rounded to the nearest 100?

- a 6,261 b 6,270 c 6,190 d 6,117

19 $9 + 2 = 2 + 9$ “..... Property”.

- a Identity Element b Commutative
c Associative d Distributive

20 $(100 + 117) + 25 = 100 + (117 + 25)$ “..... Property”.

- a Identity Element b Commutative
c Associative d Distributive

21 A store has 4,000 toys, and 3,600 toys are left. If the symbol P represents the number of sold toys, then which bar model represents this equation?

a

3,600	
4,000	P

c

4,000	
3,600	P

b

P	
3,600	4,000

d

3,000	
3,600	P

22 $613 - 247 =$

- a 567 b 434 c 366 d 807

23 The additive identity is

- a 1 b 0 c 10 d 60

24 The estimation of 6,563,235 using the Front-End Estimation strategy is

- a 6,000,000 b 6,500,000 c 6,600,000 d 7,000,000

Final Revision and Exams

- 25 The additive neutral element $+ 99 =$
 (a) 99 (b) 100 (c) 0 (d) 1
- 26 $13 + 0 = 0 + 13 = 13$, the property used is the Property.
 (a) Associative (b) Commutative
 (c) Additive Identity (d) Distributive
- 27 If $9 + X = 27$, then $X =$
 (a) 927 (b) 63 (c) 36 (d) 18
- 28 The best unit for measuring the height of a child is
 (a) kilometers (b) meters (c) centimeters (d) millimeters
- 29 6,000 cm 6 m.
 (a) < (b) = (c) > (d) >
- 30 200,000 cm =
 (a) 2 km (b) 20 m (c) 200 dm (d) 200 mm
- 31 The liter is a measurement unit of the
 (a) weight (b) capacity (c) mass (d) length
- 32 The best unit for measuring the height of a school is
 (a) kilometers (b) meters (c) centimeters (d) millimeters
- 33 In the opposite bar model the value of a g.
- | | |
|------|------|
| a | |
| 3 kg | 50 g |
- (a) 3050 (b) 305 (c) 350 (d) 503
- 34 4 m = dm.
 (a) 40 (b) 400 (c) 4000 (d) 4
- 35 3 tons = kg.
 (a) 3,000 (b) 30 (c) 300 (d) 3

- 36 5 kg = g.
 a 5,000 b 5 c 50 d 500
- 37 20 km = meters.
 a 2 b 200 c 2,000 d 20,000
- 38 13 liters and 30 mL = mL.
 a 1,330 b 13,030 c 43 d 3,013
- 39 8 Km, 14 m = m.
 a 8,014 b 814 c 148 d 80,014
- 40 8 hours = minutes.
 a 480 b 192 c 80 d 800
- 41 4 L + 4,000 mL = L.
 a 8 b 8,000 c 4,400 d 4,000
- 42 6500 g =
 a 65 kg , 50 g b 6 kg , 500 g
 c 6 kg , 5 g d 80 kg
- 43 6:30 + 20 mins =
 a 7 hours b 6 : 50 c 6 :10 d 6
- 44 7 km , 425 m = m.
 a 700,425 b 7,524 c 7,245 d 7,425
- 45 3 hours = minutes.
 a 120 b 180 c 100 d 240
- 46 A square has sides of 7 mm, its surface area mm².
 a 14 b 49 c 28 d 36
- 47 A square has a perimeter of 12 cm, then its area is cm².
 a 48 b 9 c 36 d 144

48 The side length of a square with area of 25 cm^2 is

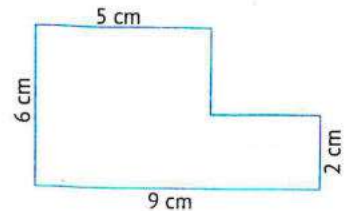
- a 5 cm^2 b 20 cm c 5 cm d 100cm

49 The perimeter of a square whose side length is 16 cm =cm.

- a 4 b 16 c 8 d 64

50 The area of the opposite figure equals = cm^2 .

- a 38 b 33
c 24 d 29



51 In a rectangle, the half perimeter is equal to

- a the half area b $L + w$
c $(L + W) \times 2$ d $L \times W$

52 Perimeter of a square =

- a $S \times S$ b $L \times W$ c $L + W$ d $S \times 4$

53 A rectangle its length is 8 cm and its width is 4 cm, then its area = cm^2 .

- a 12 b 32 c 64 d 24

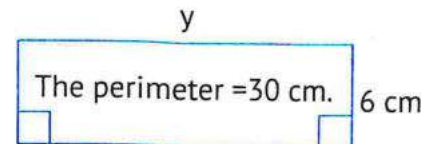
54 If a rectangle's length is 5 cm and its width is 3 cm, then its perimeter
.....cm.

- a 15 b 8 c 16 d 30

55 In the opposite figure:

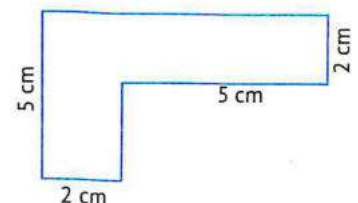
The value of y =cm.

- a 5 b 12 c 9 d 15



56 The perimeter of the opposite complex figure equalscm.

- a 14 b 19 c 24 d 21



- 57 $50 \times \dots = 2,000$
 a 4 b 40 c 400 d 4,000
- 58 $6 \times 8 = 8 \times \dots$
 a 6 b 8 c 2 d 14
- 59 $7 \times (3 \times 5) = (\dots \times 3) \times 5$
 a 21 b 7 c 5 d 3
- 60 If $45 = 9 \times a$, then $a = \dots$
 a 54 b 45 c 9 d 5
- 61 $\dots$ is 3 times the number 7
 a 10 b 4 c 21 d 24
- 62 The number 20 equals 5 times the number
 a 4 b 5 c 15 d 25
- 63 If $a \times 31 = 31 \times 9$, then $a = \dots$
 a 3 b 8 c 9 d 31
- 64 If $6 \times 7 = 42$, then 42 is a $\dots$ of 6 and 7.
 a multiple b factor c double d triple
- 65 Which equation would be best to include an explanation of the Commutative Property of multiplication?
 a $3 \times 1 = 3$ b $9 \times 6 = 6 \times 9$
 c $6 \times [2 \times 4] = [6 \times 2] \times 4$ d $5 \times 16 = [5 \times 11] + [5 \times 5]$
- 66 $2 \times 3 \times 4 = \dots$
 a 234 b 9 c 24 d 10
- 67 $9 \times m = 36$, then $m = \dots$
 a 4 b 36 c 3 d 18

Final Revision and Exams

68 $20 \times 5 = 2 \times \dots$

- a** 10 **b** 50 **c** 30 **d** 60

69 $8 \times 500 = 4 \times \dots$

- a** 10 **b** 100 **c** 1,000 **d** 10,000

70 $0 \times 62 = \dots$

- a** 62 **b** 0 **c** 1 **d** 620

71 The bar model

5	5	5	5	5
---	---	---	---	---

 represents the number

- a** 50 **b** 25 **c** 5 **d** 20

72 is a prime number.

- a** 64 **b** 15 **c** 17 **d** 21

73 The number that has only two factors is called a/an number.

- a** composite **b** prime **c** even **d** odd

74 A number whose all factors are (1, 2, 4, 5, 10, 20) is

- a** 5 **b** 10 **c** 100 **d** 20

75 6 is a composite number because it has

- a** one factor only **b** two factors only
c more than two factors **d** no factors

76 is a factor of 8.

- a** 2 **b** 16 **c** 12 **d** 5

77 is the number that is a multiple of 2, 3, 4 and lies between 20 and 30.

- a** 24 **b** 26 **c** 28 **d** 36

78 16 has factors.

- a** 6 **b** 5 **c** 1 **d** 16

- 79 Which is NOT a common multiple of 9 and 6?
 a 18 b 27 c 36 d 54
- 80 is a prime number.
 a 16 b 11 c 15 d 18
- 81 The prime number is the number that has factor(s) only.
 a 0 b 1 c 2 d 3
- 82 All the factors of the number 6 are
 a 2 , 3 , 6 b 1 , 2 , 3 , 6 c 1 , 2 , 3 d 2 , 3
- 83 The common factor of all numbers is
 a zero b 1 c 3,000 d 3
- 84 The greatest common factor (GCF) of 10 and 24 is
 a 34 b 22 c 2 d 14
- 85 The factors 1, 3, 9, and 27 are all factors of the number
 a 36 b 27 c 9 d 3
- 86 5 has factor(s) only.
 a 1 b 2 c 3 d 4
- 87 The common multiples of 2 and 3 together are multiples of the number.
 a 5 b 27 c 8 d 6
- 88 is a factor of 72.
 a 5 b 9 c 7 d 11
- 89 If $600 \div 10 = 60$ then the divisor is
 a 1 b 10 c 60 d 600
- 90 The common multiples for all numbers is
 a 2 b 1 c 0 d 10

91 If $40 \div 8 = 5$, then 5 is called

- (a) divisor (b) dividend (c) quotient (d) remainder

92 The related fact of $25,000 \div 5$ is

- (a) $250 \div 5 = 5$ (b) $25 \div 5 = 5$
(c) $20 \div 5 = 4$ (d) $2,500 \div 5 = 500$

93 Which of the following equations represents the opposite division problem?

- (a) $365 \times 5 = 73$ (b) $365 \times 73 = 5$
(c) $365 \div 5 = 73$ (d) $73 \div 365 = 5$

$$\begin{array}{r} 73 \\ 5 \overline{) 365} \end{array}$$

94 $805 \times \dots = 3,220$

- (a) 4 (b) 6 (c) 7 (d) 10

95 If $8 \times x = 3 \times 8$, then $x = \dots$

- (a) 3 (b) 8 (c) 16 (d) 12

96 $(4 \times 5) + (4 \times 20) + (30 \times 5) + (30 \times 20) = \dots \times \dots$

- (a) 43×52 (b) 34×25 (c) 42×35 (d) 32×45

97 $3 \times 2 + 8 \times 2 = \dots$

- (a) 23 (b) 24 (c) 22 (d) 32

98 $3,200 \div 4 \dots 8,000 \div 8$

- (a) $>$ (b) $=$ (c) $<$ (d) $\geq$

99 Which is the first step in evaluating solve using the order of operations:

$$7 + 12 - 6 \div 2$$

- (a) $7 + 12$ (b) $12 - 6$ (c) $6 \div 2$ (d) $7 - 6$

100 The equation based on the comparison statement "3 times the number 7" is

- (a) $3 \times 7 = A$ (b) $7 - 3 = A$ (c) $3 + 7 = A$ (d) $7 \div 3 = A$

Second: Answer the following:

- 1 Write the numbers in an ascending order:

8,092,561, 9,208,111, 7,534,786, 8,650,336

- 2 Round 572,621:

a To the nearest hundred:

b To the nearest hundred thousand:

- 3 The number 5,005,050,500(In word form)

- 4 A colony of ants eats approximately 2,000 grams of food each day.
If the ants have 10 kilograms of food stored. How many days will the food last?

- 5 A primary school with 1,028 student, 542 of them are girls. How many boys are there in this school?

- 6 A road of 800 km length. If a train travelled a distance of 675 km from this road. What is the remaining distance of the road?

- 7 A bridge of ants consists of 142 ants and another bridge consists of 165 ants. How many ants in the two bridges together?

- 8 In the following equation $A + 125 = 300$, find the value of A.

9 Find the value of unknown in the following:

a

2,600	
1,800	P

b

A	
12,800	3,542

10 $9,845,122 - \dots = 100,000$

11 The value of x in the equation $200 + x = 62,340$ is

12 A jug of 10 liters of water. How many milliliters does it have?

13 A box has a mass of 5 kg and 700 g, find its mass in grams.

14 $8 : 15 + 3 : 50 = \dots$

15 Fish tank with a capacity of 50 liters is filled with 20,000 milliliters of water.
How many more liters of water are needed to fill it up completely?

16 Ola started work at 12:15 pm, and finished her work at 2:30 pm.
How much did Ola spend at work?

17 A bus leaves for Cairo at 4:30 pm. It takes 1h, 25 mins. to reach there. At what time will it reach at Cairo?

- 18 In the opposite bar model, find the value of the unknown y .

.....

9,232	
3,232	y

- 19 Amira ate 2 apples, and Ahmed ate 5 times as many.
How many apples did Ahmed eat?

.....

- 20 An ant works from 6:50 am to 10:58 am.
How long does the ant work?

.....

- 21 Two weeks and three days =

- 22 Farida bought a bottle of milk of capacity 3 liters and drank from it 1,500 mL
How many liters are left?

.....

- 23 List the following lengths in an ascending order.

7 m, 7,000 cm, 7 km, 7 mm

.....

- 24 Murad has 3,256 pounds, and Farida has 2,804 pounds.
What is the difference between their money?

.....

- 25 Mahmoud saved 250,000 piasters and got 39,000 piasters from his
father. What is the sum of Mahmoud's money?

.....

- 26 If a rectangle's width is 4 cm and its length is 6 cm. Find its area.

.....

- 27 A square has a side length of 4 meters. Calculate its area.

.....

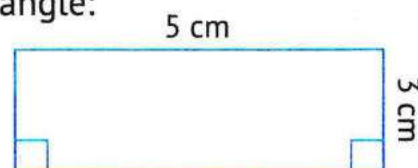
- 28 Calculate the side length of a square If its perimeter of is 24 m.

.....

- 29 Find the area and perimeter of the opposite rectangle:

A =

P =



- 30 If the area of a rectangle= 24 cm^2 , and its length= 6 cm. Find its width.

.....

- 31 A rectangular gymnasium is 7 meters long and 4 meters wide. Find its perimeter.

.....

- 32 A squared room its side is 6 meters. What is the perimeter of the room?

.....

- 33 Sameh's book is 30 cm long. The cover of Sameh's book has a perimeter of 100 cm. What is Sameh's book width?

.....

- 34 Use the area model to find the product of 23×75 .

.....

.....

	70	5
20	.....	.....
3	.....	.....

- 35 Ahmed bought 3 pens. If the price of one pen is 100 pounds, what is the price of all pens?

.....

36 Find the product of:

a 128×3 [By any way]

.....

b $784 \div 7$ [By any way]

.....

37 Sara travelled 9 days continuously, She travelled 5,000 meters each day.
How many kilometers did she walk in all?

.....

38 Use the associative property of multiplication to get the result of: $2 \times 5 \times 14$.

.....

.....

39 $60 \times 5,000 =$ (Complete.)

40 "a" is 4 times as many as 9, then the Equation is:

41 Find 4 multiples of the number 9.

.....

42 Write all the factors of the number 18.

.....

.....

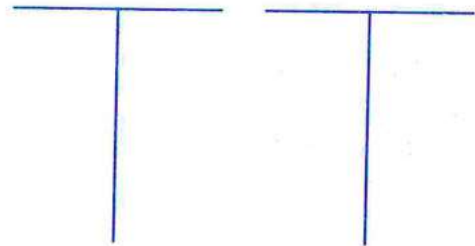
43 Find the GCF for 16 and 20:

a Factors of 16 are

b Factors of 20 are

c Common factors are

d GCF=



44 Find The G.C.F of 7 and 21:

- a Factors of 7 are
- b Factors of 21 are
- c Common factors are
- d GCF=

45 Write all factors of the number 36, then decide if the number is a prime or composite:

- Factors of 36 are

46 Find the GCF for 18 and 12:

- a Factors of 18 are
- b Factors of 12 are
- c Common factors are
- d GCF =

47 $564 \times 1,000 =$ (Complete.)

48 Complete: $\times 100 = 1,700$

49 $38 \div 6 =$ R2 (Complete.)

50 Find the quotient of $4,000 \div 5 =$

51 Solve using the order of operations: $(10 + 80) \div 3 - 20$.

.....

52 Solve using the order of operations: $67 + 3 - 4 \times 5$.

.....

53 Find the value of $30 - 4 \times (4 + 2)$.

.....

.....

54 Use any strategy you prefer to find $455 \div 3$:

.....

.....

55 Solve using the order of operations: $13 + 36 \div 4$

.....

56 There are 48 mugs that need to be put in boxes and shipped. Eight mugs can fit in each box. How many boxes will be needed to ship the mugs?

.....

57 There are 72 children in the park. They want to make teams with 8 children in each team. How many teams will they make?

.....

58 A wall of length 16 meters long was divided into 8 parts. Find the length of each part in cm.

.....

59 8 people participated in an exhibition and each one of them won 235 pounds, how much did they all win?

.....

60 Ants walk about 5,000 meters every day. How many meters do ants walk in 6 days?

.....

Model Exams

Cairo Governorate - Al Basatin Educational Zone

1

First: Choose the correct answer:

1 40 is 8 times the number.....

- a 4 b 5 c 6 d 7

2 If $4,010 \div 100 = 40$, R 10, then the divisor is

- a 4,010 b 100 c 40 d 10

3 The area of a rectangle of length 4 m, and width 6 m is m^2 .

- a 10 b 16 c 20 d 24

4 The smallest prime number is

- a 0 b 1 c 2 d 3

5 The product of $30 \times 15 =$

- a 4,500 b 450 c 5,400 d 540

6 The digit in the Ten Thousand place in 8,632,471 is

- a 2 b 3 c 6 d 8

7 3 kilometer, 12 meter = meters.

- a 312 b 3,012 c 30,012 d 3,120,000

8 The number 19 million, 568 thousand, 742 is written in the standard form as

- a 19,568,000 b 19,742,568 c 19,568,742 d 19,000,7 42

9 Rounding the number 5,231 to the nearest Hundred is

- a 5,300 b 5,200 c 5,230 d 5,240

Second: Answer the following:

1 Find the greatest common factor (GCF) of 12 and 18.

A factors of 12 are

B factors of 18 are

C Common factors are

D GCF =



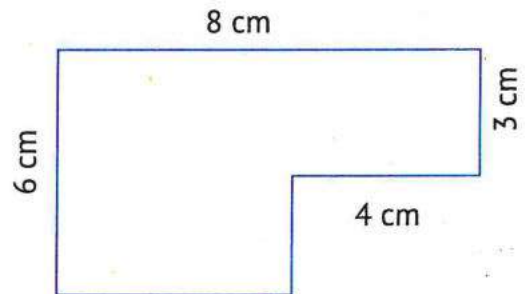
2 Write 4 multiples of 10 :,,,

3 A bridge of ants consists of 1,523 ants, and another bridge consists of 1,346 ants. How many ants are there in the two bridges together?

.....
.....

4 Find the area of the opposite figure.

.....
.....
.....



5 Find the perimeter of a square with side length of 9 cm.

.....

6 Find the value of the symbol "a" in the equation: $a - 2,500 = 5,000$.

.....

7 Using the opposite bar model. Find the value of k.

k =

7,305	
k	3,048

Giza Governorate - El Ayyat Educational Zone

2

First: Choose the correct answer:

1 $423 \times 4 = \dots\dots\dots$

a 1,060

b 1,692

c 8,240

d 6,061

2 $497 \div 7 = \dots\dots\dots$

a 17

b 1

c 71

d 5

3 The standard form of the number 6 million and four is

a 6,000,004

b 4,006,000

c 6,400,000

d 6,400,004

4 The number of factors of the number 8 is

a 2

b 3

c 1

d 4

5 If the side length of a square is 8 cm, then its area is cm^2 .

a 46

b 64

c 16

d 32

6 When rounding the number 3,980 to the nearest Thousands is

a 4,000

b 5,000

c 3,900

d 3,000

7 14 liters = mL.

a 1,400

b 14,000

c 14

d 140

8 $25 + 15 = 15 + 25$ is called Property.

a commutative

b associative

c identity

d zero

9 The only even prime number is

a 1

b 3

c 4

d 2

Second: Answer the following:

- 1 Arrange from the least to the greatest:

$$537,400 - 374,300 - 745,300 - 753,400$$

- 2 Using the opposite bar model, find the value of k.

k =

k	
7,402	5,310

- 3 Solve using the order of operations: $13 + 36 \div 4$.

- 4 Ali bought 12 kg of apples for L.E 9 a kilogram. Find the money he paid.

- 5 A rectangle with 4 cm width and 6 cm length. Find its area.

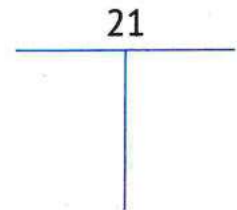
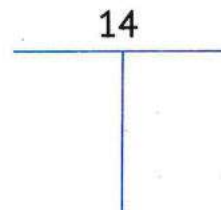
- 6 Find GCF for two numbers 14 and 21.

.....

.....

.....

.....



- 7 From the opposite model. Find the value of m.

m =

60,200	
m	49,600

Giza Governorate - El Dokky Educational Zone

3

First: Choose the correct answer:**1** The smallest prime number is**a** 0**b** 1**c** 2**d** 3**2** $2 \times 3 - 4 =$ **a** 6**b** 4**c** 1**d** 2**3** 2 days and 2 hours = hours.**a** 24**b** 26**c** 48**d** 50**4** In the division: $150 \div 3 = 50$, the divisor is**a** 150**b** 3**c** 50**d** 10**5** 6 has factors.**a** 2**b** 3**c** 4**d** 5**6** 18 is 6 times the number**a** 2**b** 3**c** 4**d** 5**7** The place value of the digit 5 in 2,572,643 is**a** Millions**b** Millions**c** Hundred Thousands**d** Tens**8** $4,890 \approx$ to the nearest Hundreds.**a** 4,900**b** 4,000**c** 5,990**d** 5,000**9** $24 \times 15 = 15 \times 24$ (..... property).**a** distributive**b** associative**c** commutative**d** multiplication identity

Second: Answer the following:

1 Find the greatest common factors (GCF) of 12 and 18

A Factors of 12 are

B Factors of 18 are

C Common factors are

D GCF =



2 Omar walks about 6 km every day. How many kilometers does Omar walk in a week?

.....

.....

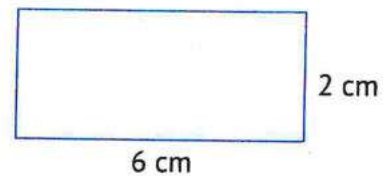
.....

3 Find the product of 75×3 .

4 Find the area and perimeter of the following:

A =

P =



5 complete:

A 9,000 grams = kilograms.

B 3 liters and 2,540 ml = mL.

6 Find (GCF) of 15 and 10

A factors of 15 are

B factors of 10 are

C Common factors are

D GCF =



7 If $645 - m = 523$. Find the value of m.

.....

Giza Governorate - Imbaba Educational Zone

4

First: Choose the correct answer:

1 The population of a country is 56,403,478, then the place value of the digit 5 is

- a Millions b Billiards
c Ten Millions d Hundred Thousands

2 The smallest prime number is

- a 0 b 1 c 2 d 3

3 A rectangle with a length of 8 cm and width of 5 cm, then its area is cm^2 .

- a 13 b 26 c 62 d 40

4 is 4 times 6.

- a 10 b 24 c 20 d 2

5 $525 \div 5 =$

- a 101 b 15 c 501 d 105

6 7 L and 77 mL = mL.

- a 777 b 7077 c 7770 d 7700

7 The common multiple of all numbers is

- a 0 b 1 c 2 d 5

8 $56,349 \approx$ to the nearest Hundred.

- a 5,635 b 5,630 c 56,340 d 56,300

9 $8 \times 35 = (8 \times 5) + (8 \times \dots)$.

- a 3 b 30 c 24 d 10

Second: Answer the following:

- 1 A square shaped room of side length 5 m. Find the area of the ground room.

.....

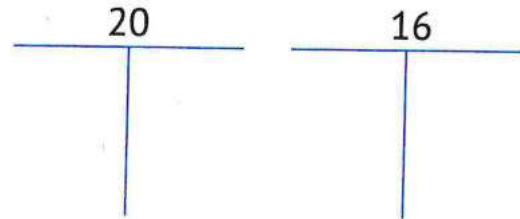
- 2 Find (GCF) of 20 and 16

A factors of 20 are

B factors of 16 are

C Common factors are

D GCF =



- 3 Find: $246 \div 3$.

.....

- 4 Muhammad has 1,200 minutes in charge of his mobile calls. If he consumed 7 minutes. Find the remaining minutes with Muhammad.

.....

- 5 Find the value of $30 - 4 \times (2 + 1)$.

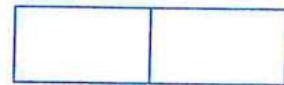
.....

- 6 If $2,000 - x = 1,300$. Find the value of x .

.....

- 7 Use the area model to find 107×9 .

.....



Alexandria Governorate - El Montzah Educational Zone

5

First: Choose the correct answer:

1 In the equation $48 \div 6 = 8$, the divisor is

- a 48 b 6 c 8 d 4

2 A square of side length 3 cm, its perimeter = cm.

- a 3 b 6 c 4 d 12

3 $18 + 10 = 10 + 18$ (..... property)

- a commutative b associative
c additive identity d distributive

4 The value of digit 7 in 2,476,236 is

- a 7 b 70 c 700 d 70,000

5 is a factor of 16.

- a 4 b 5 c 30 d 10

6 $9 + 6 \div 2 =$

- a 9 b 6 c 12 d 8

7 A rectangle its length is 8 cm, and its width is 6 cm, then its area = cm^2 .

- a 48 b 16 c 11 d 29

8 The standard form of the number 5 million, 8 thousand, 4.....

- a 5,008,004 b 50,804 c 584 d 508,004

9 $352 + (236 + 421) = (352 +) + 421$

- a 352 b 236 c 421 d 782

Second: Answer the following:

1 Find (GCF) of 9 and 12:

A factors of 9 are

B factors of 12 are

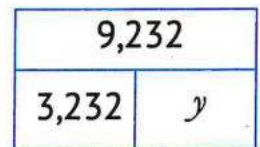
C Common factors are

D GCF =



2 In the opposite bar model, Find the value of the unknown y .

.....

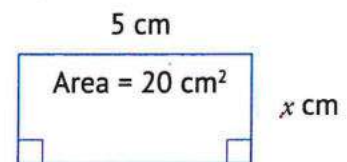


3 A factory produced 6,823 lamps in one week, the next week, the factory produced 5,258 lamps. How many lamps were produced in the two weeks?

.....

4 In the opposite figure: Find the value of x :

.....



5 Write the standard form of the number 5 million, 8 thousand, 4.

.....

6 Using the area model to Find the product of 340×9 .

.....



7 Write an equation represents "8 is 3 more than the number m ".

.....

Alexandria Governorate - East Educational Zone

6

First: Choose the correct answer:

1 Which of the following numbers is a multiple of 9?

- a 45 b 89 c 61 d 19

2 $3 \times 2 + 8 \times 2 = \dots\dots\dots$

- a 16 b 22 c 32 d 23

3 The perimeter of a rectangle with two dimensions 3 cm, 7 cm = cm.

- a 34 b 17 c 20 d 21

4 Area of square =

- a $S \times S$ b $L + W$ c $S + S$ d $S \times 4$

5 2,000 m = km.

- a 20 b 2 c 200 d 2000

6 $6 \times 3 = 3 \times 6$ (..... property).

- a associative b commutative
c additive identity d none of the above

7 37,980 37,890

- a $<$ b $>$ c $=$ d $\leq$

8 Rounding the number 34,689 to the nearest Thousands is

- a 30,000 b 35,000 c 34,600 d 34,700

9 The place value of the digit 6 in 6,054,033 is

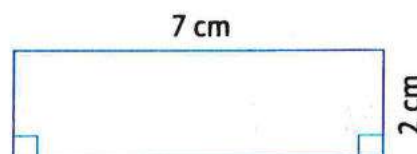
- a Ten Thousands b Millions c Thousands d Hundreds

Second: Answer the following:

- 1 Find the area of the opposite shape:

.....

.....



- 2 Sara bought 8 kg of apples for 50 L.E each. Find the money which she paid.

.....

- 3 Find the result of $875 \div 5$.

.....

- 4 Find the greatest common factor of 12 and 15:

A Factors of 12 are

B Factors of 15 are

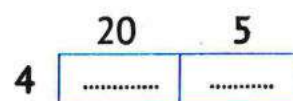
C Common factors are

D GCF =



- 5 Use the area model to find the product of 4×25 .

.....



- 6 Write an equation represents "a number is 12 less than 20".

.....

- 7 Find the result of each of the following:

A $236 \times 5 =$

B $924 \div 6 =$



Alexandria Governorate - Alamrya Educational Zone

7

First: Choose the correct answer:

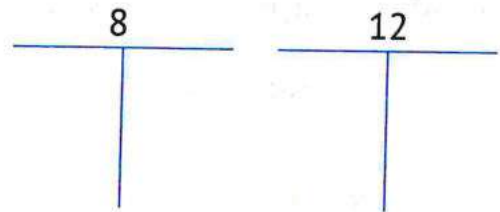
7,620	
x	3,310

- 1 From the opposite area model the value of x is
 a 3,310 b 3,930 c 10,930 d 4,310
- 2 Which of the following is a prime number?
 a 1 b 50 c 14 d 11
- 3 When we approximating the number 546 to the nearest ten is
 a 546 b 500 c 540 d 550
- 4 The standard form for 12 million, 314 thousand and 320 is
 a 520,314 b 42,571 c 12,314,320 d 52,031,412
- 5 The area of a rectangle of length 6 cm and width 4 cm is cm^2 .
 a 12 b 30 c 24 d 25
- 6 $24 \times 15 = 15 \times 24$ represents property.
 a associative b commutative
 c identity multiplicative d distribution
- 7 The number 21 is multiple of.....
 a 3 b 2 c 8 d 6
- 8 13 L and 30 ml = mL.
 a 1,330 b 13,030 c 43 d 3,013
- 9 45 ton = kg.
 a 4,500 b 45,000 c 450 d 45

Second: Answer the following questions:

1 Find the GCF of 8 and 12:

- A Factors of 8 are
- B Factors of 12 are
- C Common factors are
- D GCF =



2 Find product of 42×32 by using any strategy.

3 A piece of land in the squared shape of a side length of 6 cm. Find its area.

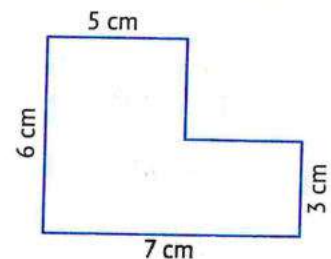
4 Find the quotient of $864 \div 8 =$

5 Find the result of $60 + 20 - 50 =$

6 Arrange the following numerical forms in descending order:

900 thousands, 9 million, 5 million and 7 thousand, 550,223

7 Find the area of the opposite shape.



Elqalyobia Governorate – Banha Educational Zone

8

First: Choose the correct answer:

1 The value of digit 6 in the number 618,409

a 600

b 6,000

c 60,000

d 600,000

2 Rounding the number 35,084 to the nearest ten thousand is

a 4,000

b 40,000

c 45,000

d 46,000

3 $2 \times 5 - 3 \div 3 =$

a 2

b 4

c 6

d 9

4 $16 + 343 = 343 +$

a 16

b 686

c 359

d 327

5 $3,237 + 2,374 =$

a 5,261

b 5,621

c 5,611

d 5,521

6 Find the quotient of: $6,400 \div 8 =$

a 800

b 80

c 600

d 60

7 A square with a side length of 7 cm, then its perimeter is

a 28

b 49

c 21

d 12

8 $4:15 + 45$ minutes =

a 5:00

b 3:50

c 4:55

d 4:00

9 120 minutes = hours.

a 2

b 3

c 3.5

d 2.5

Second: Answer each of the following questions:

- 1 Using the area model, find the product of: 12×7

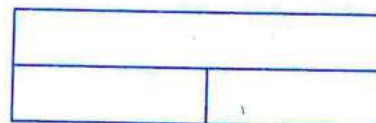


- 2 The number of boys and girls in a school is 6,353, the number of girls in this school is 3,150. What is the number of boys?

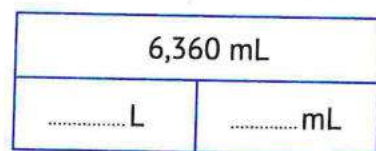
Equation:

Solution:

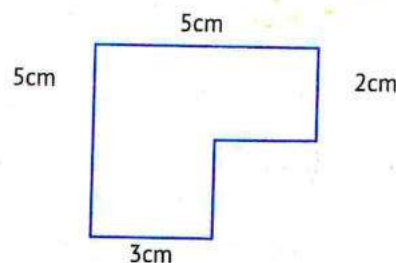
Bar model



- 3 Find the missing numbers:



- 4 Find the area of the opposite figure:



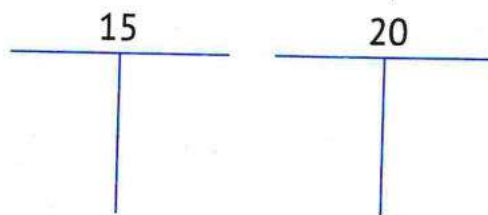
- 5 Find the (GCF) of 15 and 20:

A Factors of 15 are

B Factors of 20 are

C Common factors are

D GCF =



- 6 Write an equation represents "a number is 2 times the number 6".

- 7 What is the number which its prime factors are: 3, 3 and 5?

El Gharbia Governorate - El-Mahala Educational Zone

9

First: Choose the correct answer:

1 If $600 \div 10 = 60$, then the divisor is

a 1

b 10

c 60

d 600

2 Which of the following is a prime number?

a 1

b 10

c 15

d 17

3 A rectangle its length is [L] and its width is [W]. What is its perimeter?

a $L + W$

b $L \times W$

c $2 \times [L + W]$

d $[2 \times L] + W$

4 30 equals 5 times the number

a 3

b 4

c 6

d 8

5 The digit in the Hundred Thousands place in 3,457,652 is

a 7

b 6

c 5

d 4

6 8 kilometers, 45 meters = meter.

a 845

b 855

c 8,000,045

d 8,045

7 The opposite model represents

the product 5×23 , then $x =$

a 7

b 115

c 15

d 23

	20	3
5	100	x

8 $13 \times 24 = 24 \times 13$ represents property.

a associative

b commutative

c identity

d distributive

9 $2,357 \approx$ [Rounding to the nearest Ten]

a 2,360

b 2,358

c 2,350

d 2,400

Second: Answer the following:

- 1 Arrange the numbers in an ascending order:

38,257,967 - 32,968,327 - 42,695 - 7,986,362

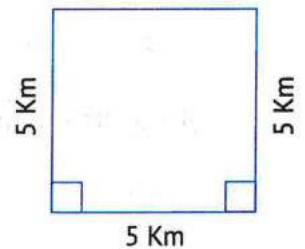
- 2 Write the factors of the number 12.

- 3 Find the product of 46×3 .

- 4 Find the area of the opposite figure:



5 Km



- 5 Find the result of following:

A $3,728 - 1,596 =$

B $3 : 25 + 6 : 42 =$

C $40 \div (5 + 3) - 1 =$

- 6 If $x - 20 = 30$. Find the value of x .

- 7 Find the missing number.

6,360 mL	
..... L	 mL

El Gharbia Educational Governorate- Tanta Educational Zone

10

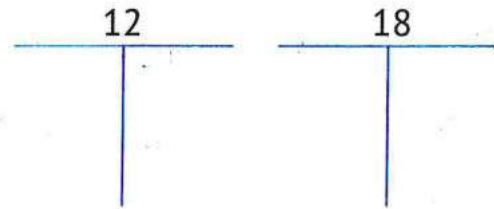
First: Choose the correct answer:

- 1 The common multiple of all numbers is
 a 1 b 2 c 3 d 0
- 2 $12 + 8 \div 2 =$
 a 5 b 14 c 16 d 10
- 3 $80 \times 30 =$ hundreds.
 a 24 b 240 c 2.400 d 240,000
- 4 The value of the digit 6 in the number 3,625,380 is
 a 6 b 600,000 c 60 d 600
- 5 A square whose side length 3 cm. Then its area = cm^2 .
 a 12 b 6 c 9 d 4
- 6 $2,024 \text{ m} =$ km, 24m.
 a 2 b 20 c 24 d 2025
- 7 1 week and 2 days = days.
 a 7 b 9 c 12 d 3
- 8 In the equation $6 \times b = 42$, then $b =$
 a 7 b 8 c 5 d 4
- 9 Round the number 4,865 = [To the nearest hundred]
 a 4,860 b 8 c 4,800 d 4,900

Second: Answer the following questions:

- 1 Find the greatest common factor [G.C.F] of 12 and 18:

- A Factors of 12 =
 B Factors of 18 =
 C common factors =
 D G.C.F =



- 2 A car filled with 75 liters of petrol. How many milliliters would that be filled?

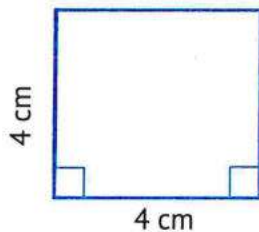
- 3 Find the result of each of the following:

A $235 \times 4 = \dots\dots\dots$

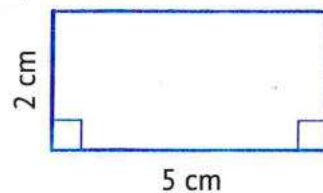
B $425 \div 5 = \dots\dots\dots$

- 4 Find the perimeter of each of the following:

A



B



- 5 A bridge of ants consists of 172 ants and another bridge consists of 128 ants. How many ants ate there in the two bridges together?

- 6 Apply the properties of multiplication to find:

$2 \times 6 \times 5 = \dots\dots\dots$

- 7 From the opposite bar mode find the value of x :

683	
x	245

kafr El Sheikh Governorate – Disoq Educational Zone

11

First: Choose the correct answer:

1 The place value of the digit 5 in 325,476 is

- a thousands b hundreds thousands
c hundreds d ten thousands

	30	5
7	210	H

2 The value of the unknown in the opposite area model. $H = \dots\dots\dots$

- a 35 b 12 c 30 d 42

3 $12 + 71 = 71 + 12$ is called property.

- a identity b associative c commutative d distribution

4 The common factor of all numbers is

- a 0 b 1 c 2 d 12

5 If the sum of prime factor of a number is 8, then the number is

- a 8 b 9 c 7 d 6

6 If the area of a rectangle is 32 cm^2 , and its length is 8 cm. Then its width = cm.

- a 8 b 4 c 5 d 3

7 The number whose prime factors are 3, 5, 2 is

- a 20 b 10 c 17 d 30

8 9 millions, 56 9,504,000 [Complete with the suitable sign.]

- a < b > c = d +

9 If the area of a square is 36 cm^2 , then its side length = cm.

- a 6 b 5 c 24 d 18

Second: Answer the following questions:

- 1 Amir bought 15 books, if the price of each book is 40 pounds. Find the total money Amir paid.

The total money Amir paid = = pounds.

- 2 A garden in the shape of rectangle of dimensions 7 m and 8 m. Calculate its perimeter and area.

The perimeter = = m.

The area = m^2 .

- 3 Write 71,285,109 in expanded form:

71,285,109 =
.....

- 4 Find the GCF of the two numbers 15 and 18:

A Factors of 15 are

B Factors of 18 are

C GCF =

- 5 Use the area model to find: 153×8 .

$153 \times 8 =$



- 6 Hossam bought 5 meters of clothes and paid 750 pounds. Find the price of each meter of clothes.

The price or each meter of cloth = $\div$ = pounds.

- 7 Arrange in a descending order:

462,356, 467,275, 1,369,851, 99,999

The order is , , ,

First: Choose the correct answer:

1 $30 \times 40 = \dots\dots\dots$

a 700

b 120

c 1,200

d 70

2 $422,012 \square 400,000 + 20,000 + 3,000 + 20 + 1$

a $<$

b $>$

c $=$

d $\leq$

3 $15 \div 3 + 2 = \dots\dots\dots$

a 3

b 5

c 7

d 20

4 $3\text{m and } 50\text{ cm} = \dots\dots\dots\text{cm.}$

a 300

b 350

c 530

d 3,500

5 The area of a square whose side length is 6 cm = $\dots\dots\dots\text{cm}^2$.

a 12

b 18

c 24

d 36

6 If $600 \div 10 = 60$, then the dividend is $\dots\dots\dots$

a 0

b 10

c 60

d 600

7 The smallest number formed from: (6 , 1 , 2 , 0 , 3 , 5) is $\dots\dots\dots$

a 653,210

b 102,536

c 102,356

d 123,560

8 The value of the digit 6 in 2,605,412 is $\dots\dots\dots$

a 6,000

b 60,000

c 600,000

d 6,000,000

9 The prime number that comes just after 11 is $\dots\dots\dots$

a 12

b 13

c 14

d 17

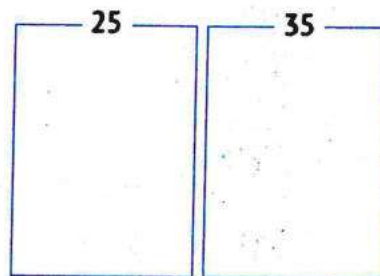
Second: Answer the following:

- 1 If the population of New Valley is 256,088 people and the population of South Sinai is 108,951 people. Find the difference between the population of New Valley and the population of South Sinai.

- 2 A fish tank with a capacity of 50 liters is filled with 20,000 millilitres of water. How many more liters of water are needed to fill it up completely?

- 3 Find the GCF of 25 and 35:

- A Factors of 25 are
- B Factors of 35 are
- C Common factors are
- D The GCF is



- 4 A train has 784 seats for passengers. If there are 7 cars on the train and each car has the same number of seats. How many passengers can sit in each car?

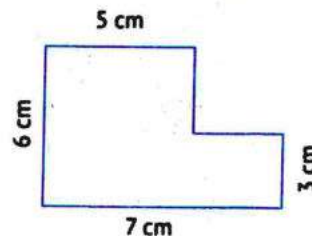
- 5 In the opposite bar model. Find the value of H:

H	
700	500

- 6 The opposite model represents the product of: 7×36 , then $7 \times 36 =$

	30	6
7		

- 7 Find the area of the opposite figure:



Al Sharqiya Governorate - Faqous Educational Zone

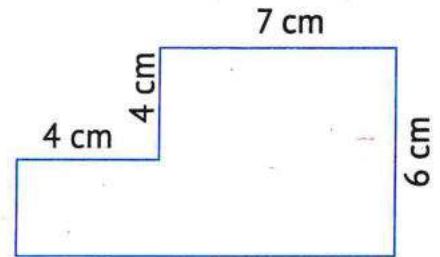
13

First: Choose the correct answer:

- 1 The value of the digit 6 in 76,001,405 is
a 6,000 b 600,000 c 6,000,000 d 6
- 2 $725,225 \approx$ (Round to the nearest Ten Thousands.)
a 725,000 b 720 c 730,000 d 725,230
- 3 The multiplicative identity element is
a 0 b 1 c 2 d 10
- 4 5 Kg , 80 gm = gm.
a 5,800 b 580 c 8,050 d 5,080
- 5 $256 + 75 = 75 + 256$, property is used.
a additive identity b commutative
c associative d distributive)
- 6 $100 - 40 \times 2 =$
a 20 b 120 c 62 d 280
- 7 The common factor of all numbers is
a 0 b 1 c 2 d 3
- 8 $2 : 35 + 6 : 55 =$
a 8 : 30 b 4 : 20 c 9 : 30 d 3 : 25
- 9 The digit is in the Ten Millions place in 428,590,417.
a 1 b 2 c 8 d 5

Second: Answer the following:

- 1 Calculate the area of the opposite figure:



- 2 There are 72 children in the park. They want to make teams with 8 children in each team. How many teams will they make?

- 3 Heba bought 24 kg of orange and the price for each kg is 8 LE. How much money did Heba pay?

- 4 Find the GCF of 16,20

- A Factors of 16 are
- B Factors of 20 are
- C Common factors are
- D GCF =



- 5 In the opposite bar model:

B =

B	
32,619	1,948

- 6 Find the product 53×47 using the area model:



- 7 Arrange the following numbers in an ascending order:

505,400, 2,000,000, 99,999, 1,502,011

The order:

Assiut Governorate - El-Badary Educational Zone

14

First: Choose the correct answer:

- 1 The value of the digit 4 in 84,375,296 is
 a 4,000,000 b 400,000 c 4000 d 40
- 2 Rounding the number 456,213 to the nearest Hundred Thousand is
 a 450,000 b 400,000 c 500,000 d 460,000
- 3 735 cm =
 a 35m, 7cm b 73m, 5cm c 7m, 35cm d 5m, 73cm
- 4 $900 \div 90 = 10$, then the dividend is
 a 10 b 90 c 900 d 1
- 5 $39 \times 7 = 273$, then $273 \div 7 =$
 a 45 b 39 c 49 d 88
- 6 $673 + [327 + 321] = [673 + \dots] + 321$
 a 673 b 327 c 321 d 648
- 7 The perimeter of the rectangle with a length of 5 cm and width of 3 cm equals cm.
 a 8 b 15 c 16 d 2
- 8 $25 \times 12 = 12 \times 25$ represents property.
 a associative b commutative
 c identity multiplicative d distributive
- 9 40 is a multiple of number
 a 6 b 7 c 8 d 9

Second: Answer the following:

- 1 A fire ant colony has 255,000 ants. A Gigantiops destructor ant colony has 6,200 ants. What is the difference between the size of the two colonies?

.....

.....

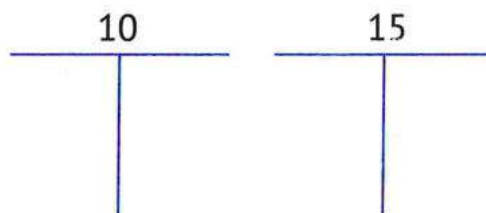
- 2 Find the GCF and 10 and 15:

A Factors of 10 are

B Factors of 15 are

C Common factors are

D GCF =



- 3 Sara traveled 9 days continuously. She traveled 5,000 meters each day. How many kilometers did she walk in all?

.....

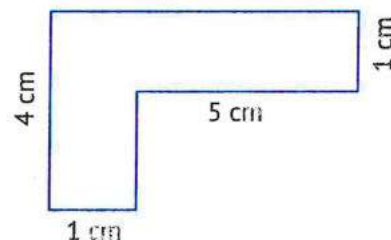
.....

- 4 The perimeter of the following complex figure equals:

.....

.....

.....



- 5 By using the bar model:
the value of x is

x	
215	285

- 6 Find:

A $12 - 5 \times 2 =$

B $3 : 25 + 1 : 26 =$

C $892 \div 4 =$

D $8,049 + 6,199 =$

- 7 Find the missing number:

..... m	
3 km	25 m

Al Azhar Al Sharif - Al Azhar zone

15

First: Choose the correct answer:

- 1 The value of the digit 5 in the number 571,320 is
 a 5 b 500 c 5,000 d 500,000
- 2 10 times the number 7 is
 a 107 b 75 c 70 d 77
- 3 Rounding the number 135,296 to the nearest ten thousand is
 a 135,200 b 135,000 c 140,000 d 130,000
- 4 The only even prime number is
 a 4 b 3 c 2 d 1
- 5 $7 + 5 \times 2 + 3 =$
 a 27 b 37 c 20 d 35

Second: Complete the following questions:

- 1 A rectangle of length 5 cm, width 3cm, then its perimeter is
- 2 The greatest number formed from the digits 4, 7, 5, 0, 1 is
- 3 5 m, 80 cm = cm.
- 4 If $x + 800 = 1,000$ then $x =$
- 5 The additive identity element is

Third: Answer the following questions:

- 1 Find the greatest common factor "G.C.F" of 10, 24

- A Factors of 10 are
- B Factors of 24 are
- C Common factors are
- D GCF =



- 2 If the perimeter of a square is 16 cm. Find its side length.

Guide Answers

Final Revision

First

- 1 20,000
- 2 3 milliard + 400 million + 3 thousand + 25
- 3 275,000,000
- 4 10,234
- 5 73,210
- 6 50,025
- 7 6,000,000
- 8 400
- 9 thirty-five million, two hundred thousand, eight hundred, ten
- 10 6,060,060,660
- 11 3,050,012,245
- 12 305,700,016
- 13 One milliard
- 14 900,000
- 15 100
- 16 9
- 17 0
- 18 6,190
- 19 Commutative
- 20 Associative
- 21

4,000	
3,600	P
- 22 366
- 23 0
- 24 6,000,000
- 25 99
- 26 Additive Identity
- 27 18
- 28 centimeters
- 29 >
- 30 2 km
- 31 capacity
- 32 meters
- 33 3050
- 34 40
- 35 3,000
- 36 5,000
- 37 20,000
- 38 13,030
- 39 8,014
- 40 480
- 41 8
- 42 6 kg, 500 g
- 43 6 : 50
- 44 7,425
- 45 180
- 46 49
- 47 9

- 48 5 cm
- 49 64
- 50 38
- 51 $L + w$
- 52 $S \times 4$
- 53 32
- 54 16
- 55 9
- 56 24
- 57 40
- 58 6
- 59 7
- 60 5
- 61 21
- 62 4
- 63 9
- 64 multiple
- 65 $9 \times 6 = 6 \times 9$
- 66 24
- 67 4
- 68 50
- 69 1,000
- 70 0
- 71 25
- 72 17
- 73 prime
- 74 20
- 75 more than two factors
- 76 2
- 77 24
- 78 5
- 79 27
- 80 11
- 81 2
- 82 1, 2, 3, 6
- 83 1
- 84 2
- 85 27
- 86 2
- 87 6
- 88 9
- 89 10
- 90 0
- 91 quotient
- 92 $25 \div 5 = 5$
- 93 $365 \div 5 = 73$
- 94 4
- 95 3
- 96 34×25
- 97 22
- 98 <
- 99 $6 \div 2$
- 100 $3 \times 7 = A$

Guide Answers

Second

- 1 The order: 7,534,786, 8,092,561, 8,650,336, 9,208,111
- 2 a 572,600
b 600,000
- 3 Five milliard, five million, fifty thousand, five hundred
- 4 2,000 grams = 2 kg
The number of days = $10 \div 2 = 5$ days
- 5 The number of boys = $1,028 - 542 = 486$ boys
- 6 The remaining distance = $800 - 675 = 125$ km
- 7 Number of ants in two bridges = $142 + 165 = 307$ ants
- 8 $A = 300 - 125 = 175$
- 9 a $P = 2,600 - 1,800 = 800$
b $A = 12,800 + 3,542 = 16,342$
- 10 9,745,122
- 11 $x = 62,340 - 200 = 62,140$
- 12 Number of mL = $10 \times 1,000 = 10,000$ mL
- 13 The mass = 5,700 gm
- 14 $11 : 65 = 12 : 05$
- 15 20,000 mL = 20 L
Number of liters = $50 - 20 = 30$ L
- 16 What time of Ola spend = $2 : 30 - 12 : 15 = 14 : 30 - 12 : 15 = 2 : 15$
- 17 The time = $4 : 30 + 1 : 25 = 5 : 55$
- 18 $y = 9,232 - 3,232 = 6,000$
- 19 Number of apples = $2 \times 5 = 10$ apples
- 20 The long time of ant works = $10 : 58 - 6 : 50 = 4 : 08$
- 21 $14 + 3 = 17$ days

- 22 3 L = 3,000 mL
The left = $3,000 - 1,500 = 1,500$ m = 1 L and 500 mL
- 23 The order: 7 mm, 7 m, 7,000 cm, 7 km
- 24 The difference = $3,256 - 2,804 = 452$ pounds
- 25 The sum = $250,000 + 39,000 = 289,000$ piasters
- 26 $A = L \times W = 4 \times 6 = 24 \text{ cm}^2$
- 27 $A = S \times S = 4 \times 4 = 16 \text{ m}^2$
- 28 $S = P \div 4 = 24 \div 4 = 6$ m
 $A = S \times S = 6 \times 6 = 36 \text{ m}^2$
- 29 $A = L \times W = 5 \times 3 = 15 \text{ cm}^2$
 $P = (L + w) \times 2 = (5 + 3) \times 2 = 8 \times 2 = 16$ cm
- 30 $W = A \div L = 24 \div 6 = 4$ cm
- 31 $P = (L + W) \times 2 = (7 + 4) \times 2 = 11 \times 2 = 22$ m
- 32 $P = S \times 4 = 6 \times 4 = 24$ m
- 33 $W = (P \div 2) - L = (100 \div 2) - 30 = 50 - 30 = 20$ cm
- 34 $23 \times 75 = 1,400 + 100 + 210 + 15 = 1,725$

	70	5
20	1,400	100
3	210	15

- 35 The price of all pens = $3 \times 100 = 300$ pounds

- 36 a $128 \times 3 = 384$
b $784 \div 7 = 112$

	100	10	2
7	784	84	14
	- 700	- 70	- 14
	84	14	0
	100 + 10 + 2 = 112		
	R = 0		

- 37 5,000 m = 5 km
She walked in all = $9 \times 5 = 45$ km
- 38 $2 \times 5 \times 14 = (2 \times 5) \times 14 = 10 \times 14 = 140$
- 39 300,000
- 40 $a = 4 \times 9$
- 41 The multiplies of 9 are: 9, 18, 27, 36
(There are another many answers.)
- 42 $18 = 1 \times 18 = 2 \times 9 = 3 \times 6$
The factors of 18 are: 1, 2, 3, 6, 9, 18

43 a Factors of 16 are: 1, 2, 4, 8, 16

b Factors of 20 are: 1, 2, 4, 5, 10, 20

c Common factors are: 1, 2, 4

d GCF = 4

16		20	
1	16	1	20
2	8	2	10
4	4	4	5

44 a Factors of 7 are: 1, 7

b Factors of 21 are: 1, 3, 7, 21

c Common factors are: 1, 7

d GCF = 7

7		21	
1	7	1	21
		3	7

45 $36 = 1 \times 36 = 2 \times 18 = 3 \times 12 = 4 \times 9 = 6 \times 6$

Factors of 36 are: 1, 2, 3, 4, 6, 9, 12, 18, 36, composite

46 a Factors of 18 are: 1, 2, 3, 6, 9, 18

b Factors of 12 are: 1, 2, 3, 4, 6, 12

c Common factors are: 1, 2, 3, 6

d GCF = 6

18		12	
1	18	1	12
2	9	2	6
3	6	3	4

47 564,000

48 17

49 6

50 800

51 $(10 + 80) \div 3 - 20$

$$= 90 \div 3 - 20$$

$$= 30 - 20 = 10$$

52 $67 + 3 - 4 \times 5$

$$= 67 + 3 - 20$$

$$= 70 - 20 = 50$$

53 $30 - 4 \times (4 + 2)$

$$= 30 - 4 \times 6$$

$$= 30 - 24 = 6$$

54 $455 \div 3 = 151 \text{ R } 2$

	100	50	1
3	455	155	5
	- 300	- 150	- 3
	155	5	2
	100 + 50 + 1 = 151		

55 $13 + 36 \div 4$

$$= 13 + 9 = 22$$

56 Number of boxes = $48 \div 8 = 6$ boxes

57 Number of teams $72 \div 8 = 9$ teams

58 The length of each part = $16 \div 8 = 2$ m

$$= 2 \times 100 = 200 \text{ cm}$$

59 What they won = $8 \times 235 = 1,880$ pounds

60 What ants walk in 6 days = $5,000 \times 6$

$$= 30,000 \text{ m.} = 30 \text{ km}$$

Guide Answers

Model Exams

(1) Cairo (Al Basatin District)

First

- 1 5 2 100 3 24
4 2 5 450 6 3
7 3,012 8 19,568,742 9 5,200

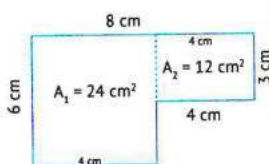
Second

- 1 A 1, 2, 3, 4, 6, 12
B 1, 2, 3, 6, 9, 18
C 1, 2, 3, 6
D 6

12		18	
1	12	1	18
2	6	2	9
3	4	3	6

- 2 10, 20, 30, 40
3 The number of ants = $1,523 + 1,346 = 2,869$ ants

- 4 $A_1 = L \times W = 4 \times 6 = 24 \text{ cm}^2$
 $A_2 = L \times W = 4 \times 3 = 12 \text{ cm}^2$
The area = $24 + 12 = 36 \text{ cm}^2$



- 5 $P = S \times 4 = 9 \times 4 = 36 \text{ cm}$
6 $a = 5,000 - 2,500 = 2,500$
7 $k = 7,305 - 3,048 = 4,257$

(2) Giza (El Ayyat District)

First

- 1 1,692 2 71 3 6,000,004
4 4 5 64 6 4,000
7 14,000 8 commutative 9 2

Second

- 1 374,300, 537,400, 745,300, 753,400
2 $k = 7,402 + 5,310 = 12,712$
3 $13 + 36 \div 4 = 13 + 9 = 22$
4 What he paid = $12 \times 9 = 108 \text{ LE}$

- 5 $A = L \times W = 4 \times 6 = 24 \text{ cm}^2$
6 The factors of 14 are 1, 2, 7, 14
The factors of 21 are 1, 3, 7, 21
The common factors are 1, 7
G.C.F = 7
7 $m = 6,200 - 49,600 = 10,600$

14		21	
1	14	1	21
2	7	3	7

(3) Giza (El Dokky District)

First

- 1 2 2 2 3 50
4 3 5 4 6 3
7 Hundred Thousand 8 4,900 9 commutative

Second

- 1 A 1, 2, 3, 4, 6, 12
B 1, 2, 3, 6, 9, 18
C 1, 2, 3, 6
D 6

12		18	
1	12	1	18
2	6	2	9
3	4	3	6

- 2 Number of km = $6 \times 7 = 42 \text{ km}$
3 $75 \times 3 = 225$
4 $A = (L + W) \times 2 = (6 + 2) \times 2 = 16 \text{ cm}$
 $P = L \times W = 6 \times 2 = 12 \text{ cm}^2$

- 5 A 9 kilograms
B $3,000 + 2,540 = 5,540 \text{ mL}$

- 6 A 1, 3, 5, 15
B 1, 2, 5, 10
C 1, 5
D 5

15		10	
1	15	1	10
3	5	2	5

- 7 $m = 645 - 523 = 122$

(4) Giza (Imbaba District)

First

- 1 Ten Million 2 2 3 40
4 24 5 105 6 7077
7 0 8 56,300 9 30

Second

1 $A = S \times S = 5 \times 5 = 25 \text{ m}^2$

- 2 A 1, 2, 4, 5, 10, 20

B 1, 2, 4, 8, 16

C 1, 2, 4

D 4

	20		16
1	20	1	16
2	10	2	8
4	5	4	4

3 82

4 The remaining = $1,200 - 7 = 1,193 \text{ min}$

5 $30 - 4 \times (2 + 1)$
 $= 30 - 4 \times 3 = 30 - 12 = 18$

6 $x = 2,000 - 1,300 = 700$

7 $107 \times 9 = 963$

	100	7
9	900	63

(5) Alexandria (El Montzah District)

First

- 1 6 2 12 3 commutative
4 70,000 5 4 6 12
7 48 8 5,0008,004 9 236

Second

- 1 A 1, 3, 9

B 1, 2, 3, 4, 6, 12

C 1, 3

D 3

	9		12
1	9	1	12
3	3	2	6
		3	4

2 $y = 9,232 - 3,232 = 6,000$

3 Number of lamps = $6,823 + 5,258 = 12,081 \text{ lamps}$

4 $A = L \times W$

$20 = 5x$ then $x = 20 \div 5 = 4 \text{ cm}$

5 The standard form is: 5,008,004

6 $340 \times 9 = 2,700 + 360 = 3,060$

7 The equation is: $8 = m + 3$

	300	40
9	2,700	360

(6) Alexandria (East District)

First

- 1 45 2 22 3 20
4 $S \times S$ 5 2 6 commutative
7 $>$ 8 35,000 9 Millions

Second

1 $A = L \times W = 7 \times 2 = 14 \text{ cm}^2$

2 What she paid = $8 \times 50 = 400 \text{ LE}$

3 175

- 4 A 1, 2, 3, 4, 6, 12

B 1, 3, 5, 15

C 1, 3

D 3

	12		15
1	12	1	15
2	6	3	5
3	4		

5 $4 \times 25 = 80 + 20 = 100$

	20	5
4	80	20

6 The equation is: $a = 20 - 12$

	154
6	924
	-600
	324
	-300
	24
	-24
	00

7 A 1180

B 154

(7) Alexandria (Alamrya District)

First

- 1 4,310 2 11 3 550
4 12,314,320 5 24 6 commutative
7 3 8 13,030 9 45,000

Second

- 1 A 1, 2, 4, 8

B 1, 2, 3, 4, 6, 12

C 1, 2, 4

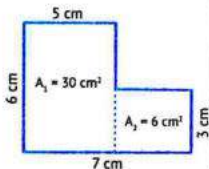
D 4

	8		12
1	8	1	12
2	4	2	6
		3	4

2 $42 \times 32 = 1,344$

Guide Answers

- 3 $A = S \times S = 6 \times 6 = 36 \text{ cm}^2$
 4 108
 5 $80 - 50 = 30$
 6 The order: 9 millions, 5 millions, 900 thousands, 550,223, 7 thousands
 7 $A_1 = L \times W = 5 \times 6 = 30 \text{ cm}^2$
 $A_2 = 2 \times 3 = 6 \text{ cm}^2$
 Total area = $30 + 6 = 36 \text{ cm}^2$



(8) Eqalyobia (Banha District)

First

- 1 600,000 2 40,000 3 9
 4 16 5 5,611 6 800
 7 28 8 5:00 9 2

Second

- 1 $12 \times 7 = 70 + 14 = 84$
 2 Equation: $x + 3,150 = 6,353$
 Solution: $x = 6,353 - 3,150 = 3,203$
 3

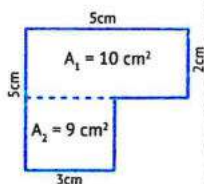
6,360 mL
6 L 360 mL

 4 $A_1 = L \times W = 5 \times 2 = 10 \text{ cm}^2$
 $A_2 = 3 \times 3 = 9 \text{ cm}^2$
 Total area = $10 + 9 = 19 \text{ cm}^2$
 5

A 1, 3, 5, 15
B 1, 2, 4, 5, 10, 20
C 1, 5
D 5

 6 $x = 2 \times 6$
 7 The number = $3 \times 3 \times 5 = 45$

10	2
70	14
6,353	
x	3,150



15	20
1	15
3	5
1	20
2	10
4	5

(9) Gharbia (El Mahala District)

First

- 1 10 2 17 3 $2 \times [L \times W]$
 4 6 5 4 6 8,045
 7 15 8 commutative 9 2,360

Second

- 1 42,695, 7,986,362, 32,968,327, 38,257,967
 2 The factors are: 1, 2, 3, 4, 6, 12
 3 $46 \times 3 = 120 + 18 = 138$
 4 $A = S \times S = 5 \times 5 = 25 \text{ km}^2$
 5

A 2,132
B 9:67 = 10:07
C $40 \div 8 - 1 = 5 - 1 = 4$
D $x = 30 + 20 = 50$

 7

6,360 mL
6 L 360 mL

$$\begin{aligned} 12 &= 1 \times 2 \\ &= 2 \times 6 \\ &= 3 \times 4 \end{aligned}$$

40	6
120	18

(10) Gharbia (Tanta District)

First

- 1 0 2 16 3 24
 4 600,000 5 9 6 2
 7 9 8 7 9 4,900

Second

- 1

A 1, 2, 3, 4, 6, 12
B 1, 2, 3, 6, 9, 18
C 1, 2, 3, 6
D 6

 2 Number of mL = $75 \times 1,000 = 75,000 \text{ mL}$
 3

A 940
B 85

 4

A $P = S \times 4 = 4 \times 4 = 16 \text{ cm}$
B $P = (L + W) \times 2 = (5 + 2) \times 2 = 14 \text{ cm}$

12	18
1	12
2	6
3	4
1	18
2	9
3	6

5 The number of ants = $172 + 128 = 300$ ants

6 $2 \times 5 \times 6$ (comm.)
 $= (2 \times 5) \times 6$ (asso.)
 $= 10 \times 6 = 60$

7 $x = 683 - 245 = 438$

	683
-	245
	438

(11) Kafr El Sheikh (Disoq District)

First

- 1 Thousand 2 35 3 commutative
 4 1 5 7 6 4
 7 30 8 < 9 6

Second

- 1 The total money Amir paid = $15 \times 40 = 600$ pounds
 2 The perimeter = $(L + W) \times 2 = (7 + 8) \times 2 = 15 \times 2 = 30$ m
 The area = $L \times W = 7 \times 8 = 56$ m².
 3 $70,000,000 + 1,000,000 + 200,000 + 80,000 + 5,000 + 100 + 9$

- 4 A 1, 3, 5, 15
 B 1, 2, 3, 6, 9, 18
 C 3

	15		18
1	15	1	18
3	5	2	9
		3	6

100	50	3
800	400	24

- 5 $800 + 400 + 24 = 1,224$
 6 The price of each meter of cloth = $750 \div 5 = 150$ pounds
 7 1,369,851, 467,275, 462,356, 99,999

(12) Al Behira (Damanhour District)

First

- 1 1,200 2 < 3 7
 4 350 5 36 6 600
 7 102,356 8 600,000 9 13

Second

- 1 The difference = $256,088 - 108,951 = 147,137$
 2 20,000 ml = 20 L

Number of liters = $50 - 20 = 30$ L

- 3 A 1, 5, 25
 B 1, 5, 7, 35
 C 1, 5
 D 5

	25		35
1	25	1	35
5	5	5	7

4 Number of seats = $784 \div 7 = 112$ seats

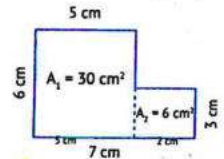
5 $H = 700 + 500 = 1,200$

6 $7 \times 36 = 210 + 42 = 252$

7 $A_1 = L \times w = 5 \times 6 = 30$ cm²

$A_2 = L \times w = 2 \times 3 = 6$ cm²

Total area = $30 + 6 = 36$ cm²



(13) Al Sharqiya (Faqous District)

First

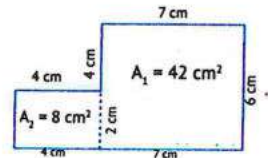
- 1 6,000,000 2 730,000 3 1
 4 5,080 5 commutative 6 20
 7 1 8 9:30 9 2

Second

1 $A_1 = L \times w = 7 \times 6 = 42$ cm²

$A_2 = L \times w = 4 \times 2 = 8$ cm²

Total area = $42 + 8 = 50$ cm²



2 Number of teams = $72 \div 8 = 9$ teams

3 What Heba paid = $24 \times 8 = 192$ LE

4 A 1, 2, 4, 8, 16

B 1, 2, 4, 5, 10, 20

C 1, 2, 4

D 4

	16		20
1	16	1	20
2	8	2	10
4	4	4	5

5 $B = 32,619 + 1,948 = 34,567$

6 $53 \times 47 = 2,000 + 350 + 120 + 21 = 2,491$

	40		7
50	2,000	350	
3	120	21	

7 99,999, 505,400, 1,502,011, 2,000,000

Guide Answers

(14) Assiut (El Badary District)

First

- 1 4,000,000 2 500,000 3 7 cm, 35 cm
4 900 5 39 6 327
7 16 8 commutative 9 8

Second

- 1 The difference = $255,000 - 6,200 = 248,800$ ants

- 2 A 1, 2, 5, 10

B 1, 3, 5, 15

C 1, 5

D 5

- 3 Number of km = $9 \times 5,000 = 45,000$ km

- 4 $P = 6 + 1 + 5 + 3 + 1 + 4 = 20$ cm

- 5 The value of x is: $215 + 285 = 500$

- 6 A $12 - 10 = 2$

B 4:51

C 223

D 14,248

- 7 $3,000 + 25 = 3,025$

3,025 m	
3 km	25 m

(15) Al Azhar Al Sharif (Al Azhar District)

First

- 1 500,000 2 70 3 140,000
4 2 5 20

Second

- 1 16 cm 2 75,410
3 580 cm 4 200 5 0

Third

- 1 A 1, 2, 5, 10

B 1, 2, 3, 4, 6, 8, 12, 24

C 1, 2

D 2

- 2 $S = P \div 4 = 16 \div 4 = 4$ cm